United States Department of Agriculture

Greater Prescott Trails

Mid-Term Projects

Environmental Assessment

Forest Service Prescott National Forest Bradshaw Ranger District November 2016

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Introduction

The Bradshaw Ranger District is proposing to improve the Forest trail system in the Prescott Basin and neighboring areas by approving the adoption of 33 miles of unauthorized trails with reroutes and design features to address natural resource concerns; constructing up to 40 miles of new trails; obliterating at least 5 miles of unauthorized trails; improving 6 trailheads/parking areas currently in use; and creating 2 new trailheads on 10 acres of the Bradshaw Ranger District, Prescott National Forest.

We prepared this environmental assessment to inform the public of this proposal and to determine whether effects of the proposed activities may be significant enough to prepare an environmental impact statement. By preparing this environmental assessment, we are fulfilling agency policy and direction to comply with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. For more details of the proposed action, see the "Proposed Action" section of this document on p. 3.

Location of the Proposed Project Area

The project is located in the greater Prescott Basin and is divided into four areas as shown in the figure below.

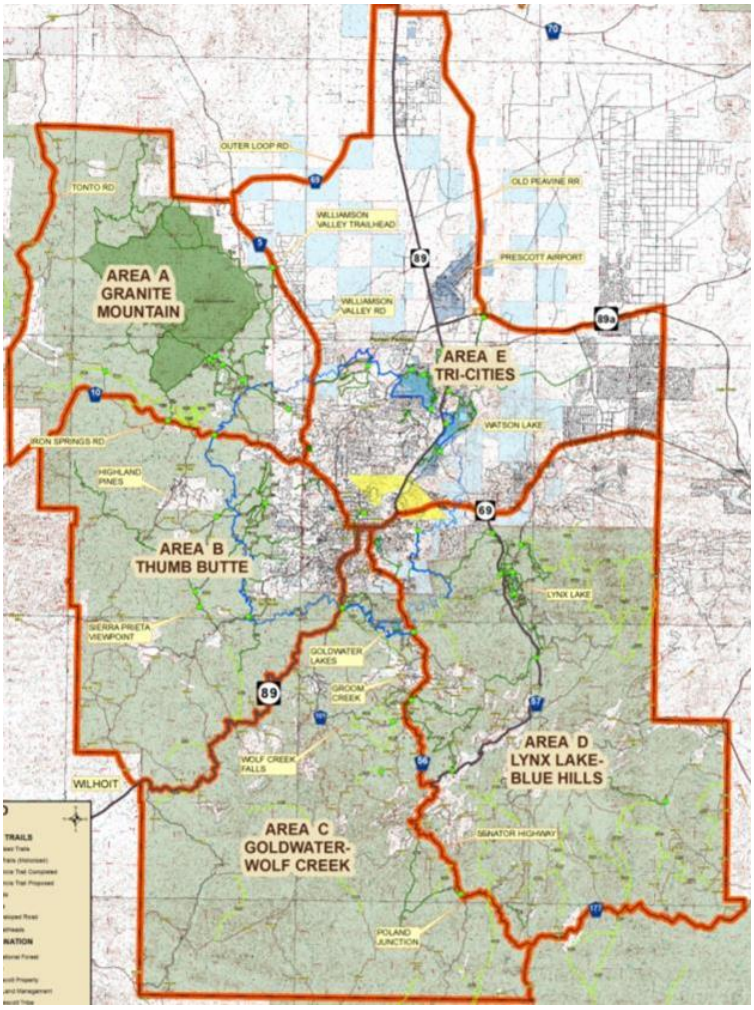

Figure 1. Vicinity map

Need for the Proposal

Starting in 2008 the Prescott National Forest (PNF) engaged individuals, local trail user groups, and various local governments in developing a recreation strategy for Central Arizona that focuses efforts on building and maintaining sustainable recreation infrastructure. The need for additional trails and trailheads was highlighted by those involved in this process, and community partners worked with the Forest Service to develop sustainable trail proposals for the greater Prescott area. In 2013, 2014, and 2015, meetings were held to gather input from all interested publics through the Greater Prescott Trails Planning (GPTP) process. This proposal is a direct result of that process and is considered part of the mid-term implementation projects.

The PNF must consider this proposal in relation to our overarching Land and Resource Management Plan, as this plan was developed in collaboration with the public to provide a framework for forest management over a 10-15 year period. This project fits with that plan in the following ways: Desired conditions for the Prescott Basin Management Area include: infrequent conflicts between recreation uses; multiple recreation opportunities; support of community based and Prescott NF based recreation opportunities; balancing motorized and non-motorized recreation opportunities; providing trail systems with interconnecting loops, as well as trails that connect communities or other destinations; use of designated trails by visitors and citizens; and "unofficial" (unauthorized) trails are not evident. (Reference: Land and Resource Management Plan for the Prescott National Forest, hereafter "Forest Plan", June 2015, DC-PB MA 1-3).

In some areas, the density of trails and roads is causing resource damage and adding excessive sediment to nearby streams. Many of these are unauthorized routes are not in good locations or well-designed so they contribute more to erosion and sedimentation than agency-designed trails. The PNF needs to address this excessive sedimentation in the project area. Not all unauthorized trails have been mapped or GPSed, so we don't have a precise number of miles of trails identified. As unauthorized trails are identified, they will also be decommissioned.

Objectives intended to move the forest toward providing sustainable recreation opportunities which fulfill desired conditions include: construct or improve facilities at 5 to 20 trailheads; protect, relocate, or rehabilitate 2-5 recreation areas or locations (including trails) that show evidence of resource damage; implement 5-10 management actions on trails to meet desired conditions. (Forest Plan, June 2015, Obj-11, 16, and 17; DC-Rec-1 and DC-Rec-2 Trails; DC-Transportation and Facilities-1).

Sustainable recreation evaluates the social, economic, and environmental implications of a project, and favors proposals that create resiliency in these three core areas. This project fits within the Prescott National Forest's sustainable recreation goals by providing improved access and opportunities for trail users on the forest while addressing social, economic, and environmental factors. It is economically sustainable because we anticipate construction and maintenance to be completed primarily by volunteers and grant funding. Additionally, creating more access points and trail loop opportunities will enhance the draw to this community and facilitate potential event opportunities. Creation of a well-designed trail system makes this project environmentally sustainable by significantly reducing soil erosion and providing for more effective and efficient long-term management of trail use in the Prescott area while restoring the natural ecosystem. This project is socially sustainable as it is the culmination of a collaborative process developed and supported by diverse recreation user groups; is intended to reduce trail user conflicts by providing more opportunity and spreading out use across a larger, more connected trail system, thus improving the quality of life for local residents and other visitors.

Public Involvement and Tribal Consultation

The proposal was listed in the Schedule of Proposed Actions beginning in January 2016. The proposed action was provided to the public and other agencies for comment during scoping that began on March 9, 2016. The schedule of proposed actions is available on the Prescott NF website at http://www.fs.fed.us/sopa/forest-level.php?110309. Information and documents for this project may be viewed at http://www.fs.usda.gov/project/?project=48048.

The Bradshaw RD hosted an open meeting on March 28, 2016 to discuss the project and build on past GPTP efforts. Twenty-nine responses were received during the scoping period for this project and helped inform the development of the proposed action. Some comments and suggestions were incorporated into the Environmental Assessment (EA) as project design features or mitigations. No comments on the proposed action were received from Native American groups during the scoping period.

On September 20, 2016, a notice of the preliminary Environmental Assessment (EA) was published in the Prescott *Daily Courier* for a 30-day comment period, with an electronic link to the document and information on where to review a hard copy. A notification was also mailed or emailed to nearly 200 interested parties. Five comments were received during this comment period. These five comment letters and responses to the comments may be reviewed in Appendix B of this document.

Proposed Action

This proposal would improve the Forest trail system in the Prescott Basin and neighboring areas by approving the adoption of 33 miles of unauthorized trails with reroutes to address natural resource concerns; construction of up to 40 miles of new trails; improvement of 6 trailheads/parking areas currently in use; and the creation of 2 new trailheads. This process will also mitigate, obliterate, and decommission approximately 35 miles (5 miles mapped) of unnecessary, unsustainable, and/or duplicate trails. The primary purpose for action is to provide additional trail opportunities, trail connections, and reasonable access points, and to reduce or limit resource damage from soil erosion. Reducing or limiting resource damage on trails is completed by using sustainable design and construction methods. Generally this is accomplished by designing sections of trail that follow the natural contour of the terrain and use reversals in grade (undulating the trail surface) to achieve drainage for water. This typically makes trail segments longer and more moderate for the user, significantly reduces erosion and allows for long-term maintenance costs to be reduced.

Most trails in this proposal will be open to hikers, bikers, and equestrians. These multi-use non-motorized trails will primarily be designed for Pack and Saddle (equestrian). Twelve miles of trails in the Emmanuel Pines area will be designed for primary uses of biking and hiking and will fit a lower standard not recommended for equestrian use. Vegetation clearing of these trails will be to a lesser standard and may have tight rocky sections that would be unsafe for most equestrian travel. The purpose of these trails is not to exclude equestrians, but to provide a naturally challenging opportunity for bicyclists and hikers. Additionally in this proposal there are 13.5 miles of trails designed for 50-inch and less motorized travel. These trails provide critical connection between trail systems to allow non-street legal motorized users long-distance routes around the city of Prescott. These routes provide long distance routes for other users as well.

Construction will be completed by volunteers, forest personnel, and/or partner organizations. Construction methods could include hand tools or mechanized equipment to create a 12-48 inch wide trail tread for non-motorized trails and 50-inch wide trails for motorized use. Obliteration of sections of unsustainable unauthorized trail and restoration of gullies on fall line trails will be achieved through covering the disturbed area with brush, rocks, and logs to prevent further erosion. New construction will

follow the natural contour of the terrain and use reversals in grade. Some of the trails in the Emmanuel Pines area will be routed over rock and advanced trail armoring techniques will be used to stabilize these trails while still providing for challenging opportunities. These actions will allow for more natural hydrologic conditions. Signs indicating “restoration in progress” will be installed to ensure old trail segments are not used. It is expected that maintenance of proposed trails will be completed through a combination of volunteers, partners, grants, and Forest Service trail crews. Generally, trail maintenance costs range from $200-$2,000/mile depending on sustainability of design and brush component on the individual trails. Maintenance of the proposed newly designed trails compared to poorly designed trails is expected to be significantly less and on average may be around $500/mile when averaging out the brushing needs.

Details on the individual trail proposals and trailhead proposals are listed by area in the tables below (mileage is rounded to the nearest tenth).

Table 1 Proposed Trail Actions – Area A

Trail No.	Existing	Name	Managed Uses	Trail Class*	Description	Length (miles)
748	yes	Valley Loop	Horse, Hike, Bike	4	Provide more accessible and beginner loop opportunities for all users. A variety of unauthorized trails exist in the area. Will encourage all users to maintain a safe and courteous speed to provide safety and enjoyable trail experience for beginner trail users.	1.1

Table 2 Proposed Trailhead Actions - Area A

Name	Type	Existing	Size	Facilities	Description
Stringfield	Non-motorized	Yes-parking only	1 Acre-5-8 stock trailers	no	Existing Parking Area, proposal would allow for improving and expanding parking and trail information (kiosk) as equestrian use in the area increases.
Contreras	Multiuse	Yes	1 Acre-8-10 trailers	no	Existing Parking Area, needs leveling, surfacing, barrier rock, and trail information

* Trail Class establishes the Design Parameters or technical guidelines for survey, design, construction, maintenance, and assessment of National Forest System trails. The lower the number the lower the level of design, construction, etc. The higher the number the higher the design, construction, etc. Trail Class 1 would be like dispersed camping, no amenities. Trail Class 5 would be like RV camping with full hook-ups. Additionally, Trail Class considers the intended user. Parameters for an equestrian trail differ from bicyclist or hiker parameters. Motorized parameters are different than non-motorized.

Table 3 Proposed Trail Actions - Area B

Trail No.	Existing	Name	Managed Uses	Trail Class*	Description	Length (miles)
738	no	Williams Peak	Horse, Hike, Bike	2	Moderate difficulty, longer loop for all users, will help disperse use and connect Sierra Prieta to White Rock TH and Prescott Circle Trail.	5.1
743	no	Saddle	Horse, Hike, Bike	2	Moderate difficulty Connector to West Spruce Trail from trail 738	0.8
744	no	Ceanothaus	Horse, Hike, Bike	2	Moderate difficulty, part of longer loop for all users, disperse use. Old FR 9707T serves same purpose, but is steep, eroded, and unsustainable	0.7
366-Ext	yes	Sierra Prieta	Horse, Hike, Bike	2	Conversion of road 9401J and motorized trail 366 to non-motorized trail to connect Prescott Circle Trail to Sierra Prieta. New trail is shown rerouted off old road to achieve more sustainable design.	1.8
264-Ext	no	West Spruce	Horse, Hike, Bike	2	Extension of the existing West Spruce Trail 264 connecting Doce Pit Rd to Skyline Dr. to Copper Basin Rd	3.2
742	Partially	Aspen Springs	Horse, Hike, Bike	2	Connect Overlook to Copper Basin Equestrian Parking to Aspen Creek Trail and Prescott Circle Trail.	2.7
741	no	Quaky	Horse, Hike, Bike	3	Equestrian Connection to Prescott Circle Trail	1.0
737	yes	Moby	Horse, Hike, Bike	2	Unauthorized trail exists now, needs to be rerouted off old road bed on northeast end.	1.8
382-ext	no	Ponderosa	Multi-use Motorized	3	Motorized Connection from Schoolhouse to Copper Canyon, allows more opportunity for the non-street legal vehicles to get around Prescott. Non-street legal vehicles can ride from Newtown Ave TH (Dewey-Humboldt) to Skull Valley. Same trail proposal for east side of White Spar Rd in Area C	3.7
					Total Miles:	**20.8**

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Table 4 Proposed Trailhead Actions - Area B

Name	Type	Existing	Size	Facilities	Description
Spence Springs	Non-motorized	No	1 acres 10-15 cars	Restrooms, trash, picnic tables	This is a new trailhead, does not exist currently as a parking area. This trailhead would be the primary non-equestrian Emmanuel Pines access
Iron Springs	Non-motorized	Yes	1 acre 3-4 trailers, 5-10 cars	Restrooms, trash, picnic tables	Equestrian TH for Emmanuel Pines and the circle trail.
Copper Basin	Non-motorized	No	2 acres 4-5 trailers, 5 cars	Restrooms	Provide for Equestrian Parking as the current Aspen Creek TH is too small and would be difficult to expand. Would displace some designated dispersed camping. Interpretation in the Aspen stands, day use area for picnicking. Install gate on FR9402D at perimeter of TH

Table 5 Proposed Trail Actions – Area B - Emmanuel Pines

Trail No.	Existing	Name	Managed Uses	Trail Class*	Description	Length (miles)
761	yes	Dinner Plate	Hike & Bike	2	For advanced users	0.8
760	Partially	Noodle	Horse, Hike, Bike	4	Easy/more accessible loop, will encourage all users to maintain safe and courteous speeds	1.2
702	yes	Spork	Horse, Hike, Bike	4	Connection from TH to system	0.3
709	yes	Sante Fe	Horse, Hike, Bike	3	Old railroad grade	4.6
708	no	Clown Town	Hike & Bike	2	Connects to Alto Pit System	0.7
712	Yes	Skyline	Horse, Hike, Bike	3	Connection to highland pines at the Fire Station	0.6
719	yes	Short Loop	Horse, Hike, Bike	2	Connection for equestrians back to Prescott Circle Trail, short loop	0.2
729	yes	BLM	Hike & Bike	2		1.0
733	yes	waterline	Horse, Hike, Bike	3	Admin Road for Community waterline	1.8

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Trail No.	Existing	Name	Managed Uses	Trail Class*	Description	Length (miles)
707	no	Backside	Horse, Hike, Bike	3	Connects EP to the T-Butte system, small segment along creek exists currently as part of Firewater	2.1
728	yes	Tataunka	Hike & Bike	2	Advanced/Intermediate difficulty	1.5
704	yes	Thank You	Horse, Hike, Bike	2	Need easement from camp EP to cross corner	1.0
724	yes	Missing Link	Hike & Bike	2	Advanced difficulty	1.5
736	yes	The Village	Hike & Bike	2	Advanced difficulty	0.2
727	yes	rock drop	Hike & Bike	2	Advanced difficulty	0.3
735	no	Tomato Slice	Hike & Bike	2	Short connector	0.7
703	partially	Italian Job	Hike & Bike	2	Advanced	1.1
762	yes	Neighborhood	Hike & Bike	3	Connects the neighborhood to the TH and the EP system	0.2
332-R-1	no	Javelina	Horse, Hike, Bike	3	Slight reroute of Circle Trail	0.1
332-R-2	no	Javelina	Horse, Hike, Bike	3	Slight reroute of Circle Trail	0.1
701	yes	Juniper Gate	Horse, Hike, Bike	2	Intermediate difficulty	1.1
706	yes	Vista	Horse, Hike, Bike	3	Easy/intermediate difficulty	1.4
710	yes	Ledge	Hike	2	View point trail	0.1
705	yes	Happy Ending	Hike & Bike	2	Advanced/Intermediate difficulty	0.2
725	partially	West Side Story	Horse, Hike, Bike	3	Intermediate difficulty - reroutes planned	2.4
721	yes	Sidekick	Horse, Hike, Bike	3	Intermediate difficulty	1.0
714	yes	Tunnel	Hike & Bike	2	Goes under railroad grade	2.3

Total Miles: 28.5

Table 6 Proposed Trail Actions - Area C

Trail No.	Existing	Name	Managed Uses	Trail Class*	Description	Length (miles)
382-ext	partially	Ponderosa	Multi-use Motorized	3	Motorized Connection from Schoolhouse to Copper Canyon, allows more opportunity for the non-street legal vehicles to get around Prescott. Non-street legal vehicles can ride from Newtown Ave TH (Dewey-Humboldt) to Skull Valley. Same trail proposal for west side of White Spar Rd in sub Area B	2.5
749	no	Marapai	Horse, Hike, Bike	3	Connects Groom Creek Horse Camp Trails to White Spar and Prescott Circle Trail also connects smaller communities to Prescott.	4.7
751	no	Bean Peaks	Horse, Hike, Bike	3	Prescott Circle Trail connector from Marapai trail to Prescott Circle Trail near Goldwater lake. Provides additional long distance loop opportunity.	2.4
750	no	Hassayampa	Horse, Hike, Bike	2	Non-motorized alternative to 384	5.1

Total Miles: 14.7

Table 7 Proposed Trailhead Actions - Area C

Name	Type	Existing	Size	Facilities	Description
White Spar	Multiuse	Yes	2 acres 20 cars, 3-4 trailers	Yes	Propose accommodating all users. Provide picnic facilities, water, bathrooms. Possibly charge a fee.
Goldwater	Non-motorized	Partially	1 acre 2-3 trailers	maybe	School bus turnaround just before Goldwater lake. Could provide for good equestrian parking

* Trail Class establishes the Design Parameters or technical guidelines for survey, design, construction, maintenance, and assessment of National Forest System trails. The lower the number the lower the level of design, construction, etc. The higher the number the higher the design, construction, etc. Trail Class 1 would be like dispersed camping, no amenities. Trail Class 5 would be like RV camping with full hook-ups. Additionally, Trail Class considers the intended user. Parameters for an equestrian trail differ from bicyclist or hiker parameters. Motorized parameters are different than non-motorized

Table 8 Proposed Trail Action - Area D

Trail No.	Existing	Name	Managed Uses	Trail Class*	Description	Length (miles)
745	Partially	Hoot Owl	Multi-use Motorized	3	Connector for all users from Bannie Mine Rd and Smith Ravine Trail to Seven-mile Gulch, and Salida Gulch making larger motorized loops possible from the Blue Hills Trail System to Skull Valley	7.3

Table 9 Proposed Trailhead Action - Area D

Name	Type	Existing	Size	Facilities	Description
Watershed	Multiuse	Yes	1 acre 10 cars	maybe	Could be improved and enlarged, maybe a restroom could be added

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Maps of all trail proposals and trailhead proposals are depicted on the overview and area maps listed below. Maps may be viewed at http://www.fs.usda.gov/project/?project=48048. These maps reflect only general trail locations because GPS field verification is incomplete. These maps are meant to facilitate analysis of potential resource concerns, assist with issue identification, and to reflect the intended recreation experience. Potential reroutes of many unauthorized trails are reflected in these maps.

1. GPTP Overview
2. Emmanuel Pines Detail
3. Area A
4. Area B
5. Area C
6. Area D

No Action

Under the No Action Alternative, the current trail system would remain and no improvements to trails or trailheads would occur under this proposal. The Forest Service would continue to maintain the current trail system and would obliterate unauthorized trails as feasible. Trailheads would remain as they are, with demand exceeding capacity.

Environmental Impacts of the Proposed Action and No Action Alternatives

This section summarizes the potential impacts of the proposed action for each associated resource. Resources that were not associated and therefore not further analyzed include Vegetation and Fuels Management, Lands, Minerals, and Special Uses.

Trails and Recreation

This section summarizes the potential impacts of the proposed action on recreational trail opportunities within the Greater Prescott Trails Planning Mid-term Project analysis area. The full analysis can be found in the *Greater Prescott Trails Plan Mid-term Project Trails Specialist Report.*

Background

Trails

Desired conditions for the Prescott Basin Management Area include: infrequent conflicts between recreation uses; multiple recreation opportunities; support of community based and Prescott NF based recreation opportunities; balancing motorized and non-motorized recreation opportunities; providing trail systems with interconnecting loops, as well as trails that connect communities or other destinations; use of designated trails by visitors and citizens; and "unofficial" (unauthorized) trails are not evident. Forest Plan, DC-PB MA 1-3).

Objectives intended to move the forest toward providing sustainable recreation opportunities which fulfill desired conditions include: construct or improve facilities at 5 to 20 trailheads; protect, relocate, or rehabilitate 2-5 recreation areas or locations (including trails) that show evidence of resource damage; implement 5-10 management actions on trails to meet desired conditions. (Forest Plan: Obj-11, 16, and 17; DC-Rec-1 and DC-Rec-2 Trails; DC-Transportation and Facilities-1)

Recreation Opportunity Spectrum

The Recreation Opportunity Spectrum (ROS) is a classification system that identifies a continuum of settings, activities, and recreation experiences. It is used to inventory and classify large areas based on national criteria involving physical, social, and managerial attributes, mostly classifying recreation opportunities as they exist. (Forest Plan, Chapter 1 pg. 11- ROS)

Activities proposed within this project area fall primarily within Roaded Natural (RN) designation. Roaded Natural areas offer about equal opportunities for isolated experiences and opportunities to interact with other groups with generally natural landscapes and subtle managerial controls. The proposed White Spar Trailhead falls within Rural (R) designation. Rural ROS are areas where the natural environment is substantially modified and interactions with other visitors prevail. Some proposed trails enter Semi-primitive Non-Motorized (SPNM) or Semi primitive Motorized (SPM), i.e., 709, 743 and 737. Both SPNM and SPM offer some isolation from man-made sights, sounds, and management controls, a predominately unmodified environment, and few visitors.

Community Landscape Vision – Prescott/Prescott Valley/Chino Valley

The community vision for recreation can be summarized as a thoughtful balance between the need for access, the protection of forest resources and aesthetics; protection of forest health while promoting a robust economy; meaningful and sustainable trails, trailheads, and designated campsites; low maintenance facilities built collaboratively among citizens and agencies (Forest Plan, Appendix C)

Existing Conditions

Trails and Trailheads

There are approximately 40 miles of unauthorized trails identified within the project area which receive regular and continuing use. These trails were not planned or designed with natural and cultural resources in mind. This system of unauthorized trails contributes to soil erosion, wildlife disturbance, and impacts to cultural sites. Efforts to manage or minimize the impacts of these unauthorized trails takes away from implementing and maintaining designated system trails.

Many of the non-system trails have been in existence in some form or another for many years. In some cases, they have existed for decades as can be seen by looking at the attached hand drawn map from 1984 in Figure 2.

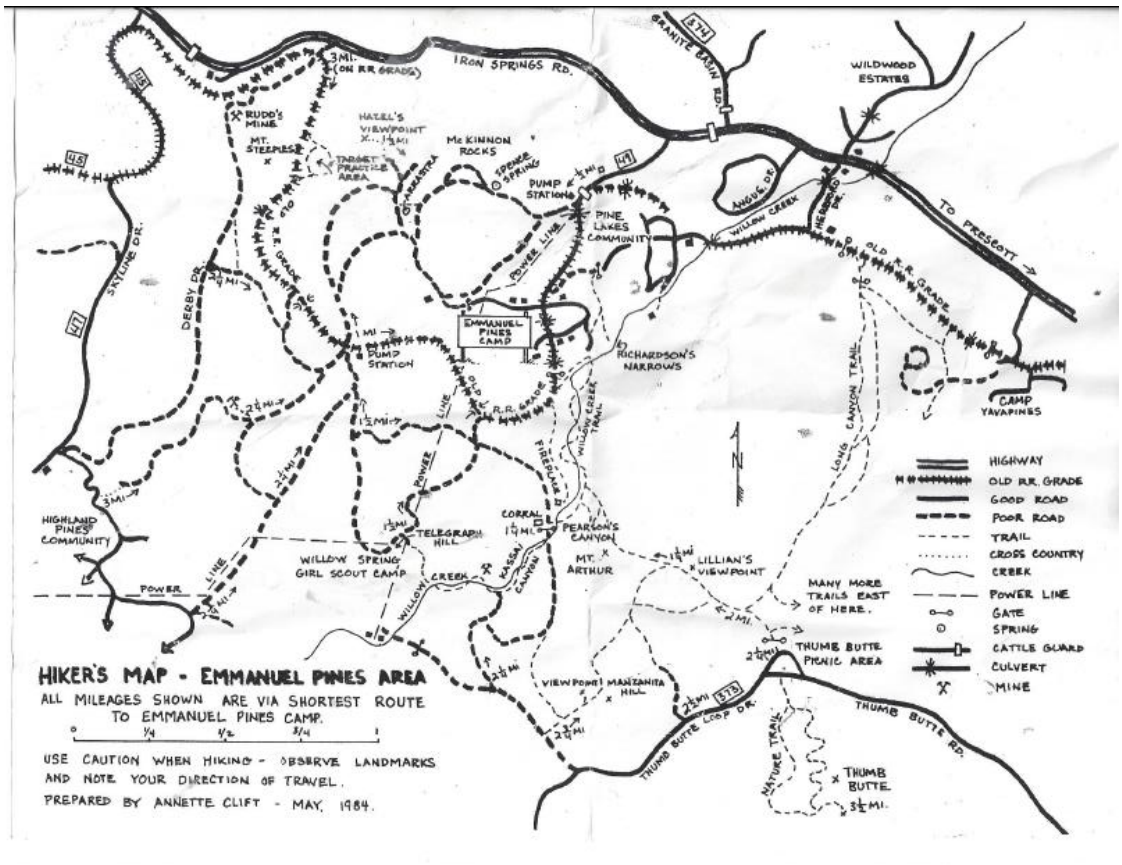

Figure 2 1984 Hiker's Map of Emmanuel Pines Area

The trails and old roads shown on Figure 2 have changed over time due to vegetation treatments in the area, trails being added to the FS system, and additional illegal/unauthorized trails being constructed by trail users. Many routes have changed location. The recreating public lacks good, reliable information to navigate and enjoy the National Forest.

Without a manageable trail system which addresses community demand, the Emmanuel Pines area will continue to have over 20 miles of non-system trails, primarily accessible to those local people who know the unauthorized system exists. The general public will miss out on the opportunity to enjoy this area and the dispersal of trail use over a larger system will be unrealized, impacting visitor experiences.

Figure 3 reflects social trails in the Emmanuel Pines area which were captured via GPS in 2013. Figure 4 shows current FS system trails in the same area as depicted in Figures 2 and 3.

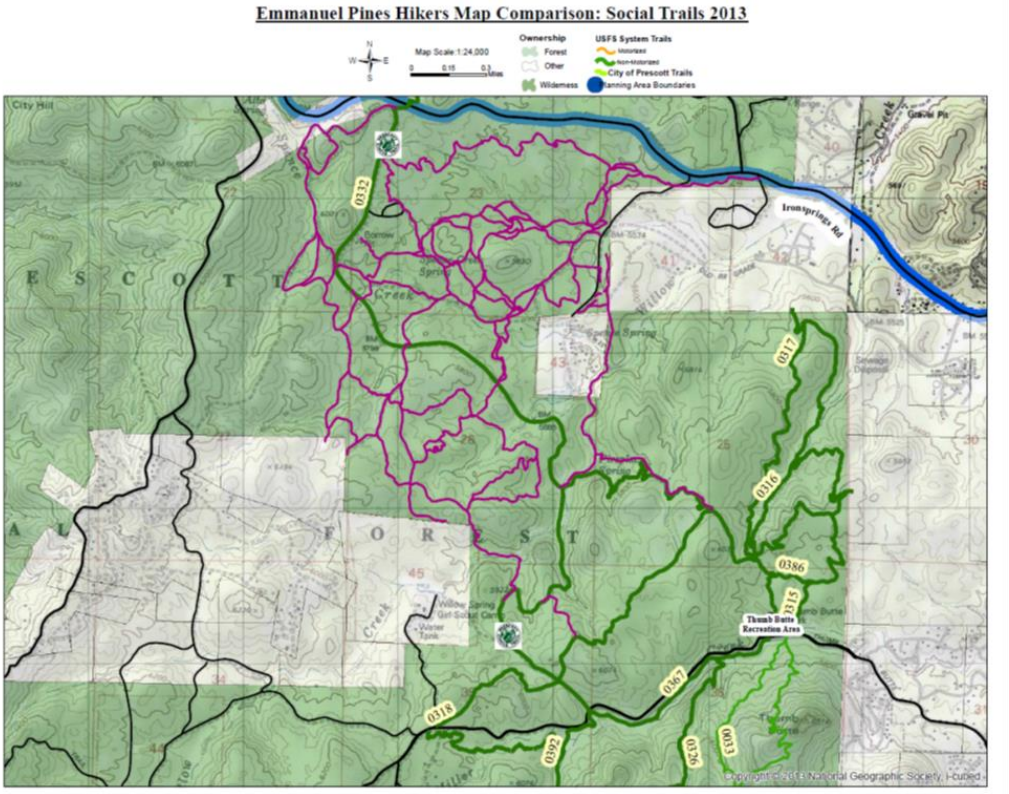

Figure 3 2013 Map of Emmanuel Pines Social Trails

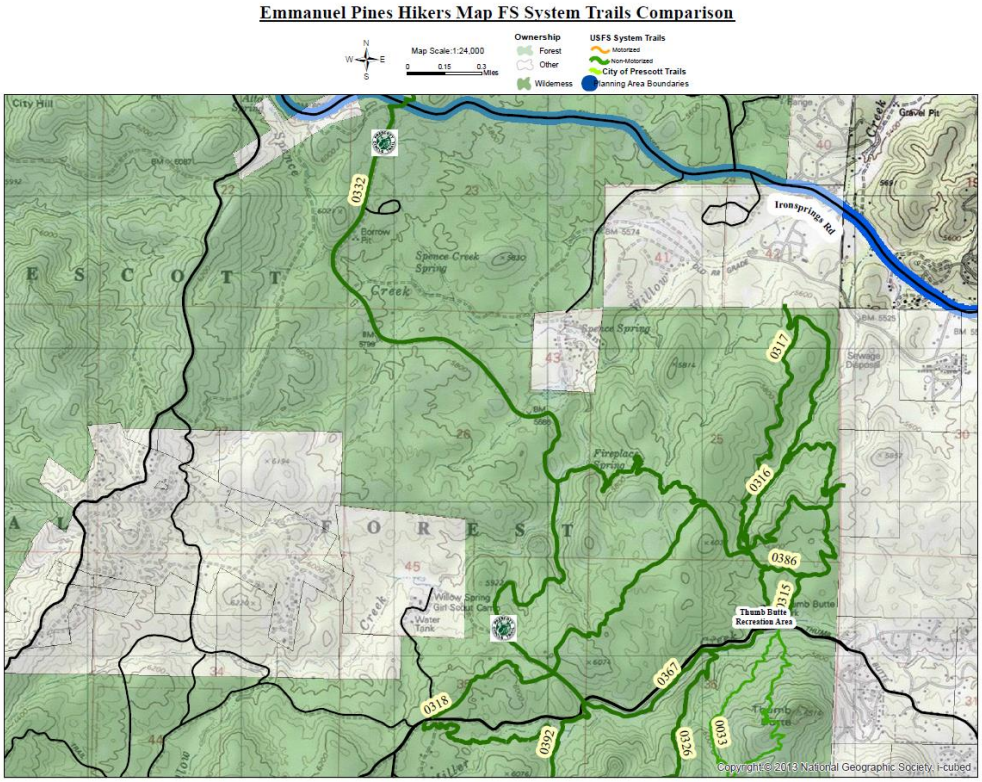

Figure 4 Emmanuel Pines Map of FS System Trails

Demand for parking currently exceeds designed and constructed parking areas for trail access across the planning area. Equestrian parking is particularly limited at many trailheads due to parking lot size, space requirements for vehicles pulling trailers and crowding. The lack of adequate parking leads to inappropriate parking along roadways, creating resource damage and safety issues with traffic. Inappropriate parking along roadways has led to the creation of many small social trails to access the established system trail(s).

Environmental Consequences

Trail Opportunities

The proposed action to adopt and redesign up to 33 miles of non-system trails will have a positive impact to soil, wildlife, cultural, and recreation resources as eroding sections of trail will be rerouted or maintained and managed for continued use. The addition of key connectors within the planning area will address issues identified through the Greater Prescott Trails Planning (GPTP) process. Implementation will include mapping, signing, and managing for the designed use as prescribed in Tables 1-9, which will assist trail users in using and navigating national forest land. Using design standards and mitigation measures, trail managers will assess conditions and take measures to protect resources, while providing the community with additional recreation trail opportunities.

Partnering with individual trail users and user groups is expected to facilitate closure of unauthorized trails and limit future illegal/unauthorized social trails from appearing. Closure and obliteration of non-system trails in the planning area will reduce impacts to forest resources and provide for a well-managed trail system. The creation of 73 miles of new system trails is expected to satisfy the forecasted non-motorized needs of the community in the Prescott Basin area over the next decade.

Obliteration of sections of unsustainable unauthorized trails, conversion of 1.7 miles of road to authorized use only, and restoration of gullies on fall line trails will reduce further erosion. New construction following the natural contour of the terrain and using reversals in grade; routing over rock and advanced trail armoring techniques will stabilize these trails while providing for challenging opportunities and allowing for more natural hydrologic conditions. Generally, trail maintenance costs range from $200-$2,000/mile depending on sustainability of design and brush component on the individual trails. Maintenance of the proposed newly designed trails compared to poorly designed trails is expected to be significantly less and on average may be around $500/mile when averaging out the brushing needs.

The construction or improvement of 8 trailheads will have a positive economic impact on the community as the demand for recreational trails and public land access continues to grow. The additional trails and trailheads will increase potential opportunities for recreation events, which often draw others to the area. Tourism is identified as “critical to the health of the local and regional economies.” (Prescott Visitor Survey 2014-2015, Arizona Hospitality Research & Resource Center, November 2015). Additionally it is expected that increasing trail opportunities will enhance the attraction of full time residents that value easy access to public lands for recreation.

No Action

With no trail actions, there be no new trails or reroutes and the existing system would continue to require regular maintenance. The system would continue to not serve as well the demands of trails users. Unauthorized trails would be obliterated as feasible. Trail heads would remain inadequate for the demands.

Scenery Management

This section summarizes the potential impacts of the proposed action on visual quality within the Greater Prescott Trails Planning Mid-term Project analysis area. The full analysis can be found in the *Greater Prescott Trails Plan Mid-term Project Scenery Specialist Report.*

Background

Scenery Management and Scenic Integrity Objective

The Scenery Management System (SMS) provides a systematic approach for determining the relative value and importance of scenery on National Forest System lands. It analyzes a landscape’s attractiveness, visibility, intactness, and value to the public to determine the scenic integrity objective (SIO) across the forest. The trails and trailheads proposed in this project fall within High and Moderate categories. On the high end, natural landscapes dominate. At the moderate level, human activities are subordinate to the natural landscape. Existing Scenic

Integrity (ESI) is a measure of the intactness of the landscape character. The higher the number of disruptions, the lower the ESI rating.

Visibility

Landscape visibility is an important aspect of the SIO rating. The Forest road and trail system and use areas have been ranked and divided up into 3 categories or Concern Levels, measuring the importance the public places on landscapes as viewed from these routes or areas. The lower the number the higher the concern. Views from all concern level 1 and 2 roads have been mapped and figured into the SIO ranking.

Desired conditions include natural landscapes unaltered by human activity on the majority of the forest (Forest Plan, DC-Scenic-1). Improvements (including permanent structures), vegetation manipulation, and ground disturbing activities and/or construction are designed to complement the character of the surrounding natural landscape (Forest Plan Guide-Scenic-1 and Guide-Scenic-2).

Existing Conditions

Visibility. Concern Level 1 Roads within the project area include: Tonto Rd, Iron Springs Rd, Skyline Dr., Thumb Butte Rd., Thumb Butte Loop Rd., Copper Basin Rd., Hwy 89/White Spar Rd., Groom Creek Cutoff Rd., and Walker Rd. Concern Level 1 trails were not analyzed for this proposal since fewer people travel these than the Concern Level 1 roads.

The extent of the unauthorized trails in the Emmanuel Pines area does detract from the area's scenic quality. Reducing and obliterating unauthorized trails in this area would improve the scenic quality.

Landscape Character: Vegetation types found within the project area include chaparral, Ponderosa pine, evergreen oak, piñon-juniper, Gamble oak, and mixed conifer.

- Area A: Vegetation becomes more open with distant views and vegetation cover of mixed deciduous evergreen shrub with some piñon-juniper. Stringfield has more grass forb mix.

- Area B: Emmanuel Pines area is characterized by rolling hills, some steeper slopes and numerous small drainages. The predominant vegetation is ponderosa pine in the northern area and ponderosa pine with evergreen shrub understory in the southern area. The drainages and some small seeps contribute to pockets of wildflower and grass varieties.

  The Copper Basin area (south of Emanuel Pines) is characterized by steeper terrain. Vegetation is predominantly ponderosa pine and Gambel oak with some piñon-juniper. A stand of aspen close to the proposed trailhead is an important visual attribute due to its uniqueness among the mostly ponderosa pine forest.

  Steeper terrain and predominantly mixed deciduous evergreen shrub occurs in the southernmost section of this subarea where TR 382 –Ext. is proposed.

- Areas C & D: These areas are similar in vegetation and terrain. Both are characterized by mature ponderosa pine. Area C has a more open understory.

Environmental Consequences

In general, single track trails have a relatively minor scenic impact on the landscape. The steeper the terrain, the more visual impact a trail will have on the landscape due to increased disturbance from cut/fill slopes. The type of vegetation, density of vegetation, canopy presence, presence of shrubs, also effects visibility and the distance from which trails can be seen.

Views from Concern Level 1 Roads

Proposed TR 742 may be visible from Thumb Butte Loop Rd. for about a mile. Once proposed 742 follows Copper Basin Rd., it should be higher in elevation and out of view or less noticeable. Proposed TR 741 between TR 742 and Copper Basin may be more visible.

Proposed TR 382-ext falls within the foreground view of Hwy 89. The trail is higher in elevation than the road (160' – 400') but the winding road and low vegetation cover may afford views of the trail. The wider tread of the motorized trail may make it more visible.

Maintaining the scenic quality of Walker Road is important due to the high numbers of recreational visitors who drive the road. The highly developed nature of the recreation area to the east makes the addition of a motorized trail on the west side a concern for cumulative effects. Most of the trail is in the middle-ground (1/2-4 miles) visible area, and should be less intrusive because of the distance from the road. Recent vegetation management projects have opened up many views from Walker into the forest which may make the proposed trail more visible.

Table 10 SIO Levels of Proposed Trails

	Total Trail Miles	Moderate SIO	High SIO
Pack & Saddle Trails	48.5	19.5	29
Bicycle trails	11	.7	10.3
ATV trails	13.5	4.7	8.8
All Trails	73	23.9	50.1

Trailheads

Trailheads have a much larger impact on scenic quality than trails due to their size. While clearings are naturally occurring in the forest, gravel surfacing and parked vehicles are an intrusion into the natural landscape. Of the 8 proposed trailhead locations, 6 are in areas with a SIO of High, in part because they are located along Concern Level 1 roads. Many already have some disturbance from existing parking use, but increasing the size and adding gravel surfacing will cause them to blend in less well.

The smaller the parking area the more it will fit into the landscape. Mitigation measures to incorporate during the design phase would be to create several small parking areas instead of one

large one or leave pockets of vegetation in islands. Minimizing the removal of vegetation around the parking area or siting it in a way to minimize the view from the road could minimize visual impacts in some locations.

At some of the proposed locations a very large level area will be needed to accommodate the trailers. If the terrain is not flat this could require more man made features such as retaining walls or asphalt pavement because of steep road grades. The color, materials and design of these will need to blend with the existing natural character of the area.

Stringfield: SIO of Medium. There is limited evidence of current parking in this location. May be visible from greater distances. Minimal amount of improvements and smaller number of trailer parking will minimize the footprint and be less visually intrusive.

Contreras: SIO of Medium due to the overhead power line. There is already a parking area in this location. No visual concerns as long as the proposed parking is not expanding.

Spence Springs: SIO of High. Steep topography means a parking area in this location will be more visually evident. There is not parking in this location currently. Mitigation could be to build smaller parking area along Spence Springs Rd.

Iron Springs: SIO of High. There is a small disturbed area currently used for parking, defining this could improve scenic quality. Expanding to accommodate trailers will disturb a large area and require grading. Dense vegetation should screen it from Iron Springs Rd.

White Spar: SIO of High. There is an existing parking area that will be reclaimed and visually improve the views along Hwy 89 and the entrance to the campground. Constructing a new larger parking area closer to the campground will be more visually intrusive to campers. The amount of grading to construct the new parking area because of steep grades may be visible from Hwy 89. This site will need careful design to blend with the surrounding existing landscape character.

Copper Basin: SIO of High. This new parking area is in one of the more natural areas. There are 2 designated dispersed camp sites there now so there is lack of vegetation from use and there is an adjacent power line which both detract from the existing visual quality. This site also will need careful design to blend with the surrounding existing landscape character.

Watershed: SIO of High. While the SIO is high, the disturbed area where people currently park would be improved by development of a trailhead as long as the footprint is not too greatly increased.

Goldwater: SIO of High. Similar to Watershed but smaller, people currently park in this area. Visual quality of area could improve if the development stays within the footprint of the existing.

No Action

With no trail and trailhead construction, there would not be any impacts from disturbance or vegetation removal. The No Action alternative would have little to no impact on visual resources.

Soils and Hydrology

Background

This chapter discloses the direct, indirect and cumulative effects of the GPTP on the soil and physical water resources in the analysis area compared to the no action alternative (existing condition). For this soil and water resources analysis, the GPTP Area (here after referred to as project area) is composed of some of the 6 sixth level watersheds listed in Table 11. The proposed project includes the development or reclamation of unauthorized trails into the Prescott National Forest Trails system. Approximately 73 miles of ATV, bicycle, and pack and saddle trails will be developed or upgraded to Forest Service standards within the soil and water resources analysis area (Table 11). This chapter provides the scientific and analytical basis to compare a no action approach to the proposed alternative. (40 CFR 1508.9(b).

Summary of Proposed Actions

- Construct or improve eight trailheads on approximately 10 acres of land, overall analysis excludes the Stringfield and Contreras trailheads, analysis acres total 7.9 acres
- Construction or improve approximately 13.5 miles of ATV trails
- Construction of approximately 49.6 miles of Pack and Saddle trails
- Construction of approximately 9.5 miles of bicycle trails
- Construction of approximately 0.1 miles of hike only trails
- Obliteration of approximately 5 miles of social or illegal trails
- Conversion to authorized use only of approximately 1.7 miles of roads
- Obliteration of approximately 2.0 miles of road has occurred
- With these actions the Forest Service will be bringing approximately 33 miles of social or illegal trails into the Forest Service trail system and up to Forest Service standards

The proposed treatments within the Prescott National Forest conforms to the objectives 16, 17, 22 of the Forest Plan (USDA, 2015). It does so by moving the project toward the completion of a comprehensive trail plan, increasing recreational opportunities for all users by improving existing trails, and adding new trails to the system while improving stream or drainage crossings associated with the trails to facilitate flow and sediment transport.

Data collected indicates that the majority of the analysis areas within the project area do not currently meet proper watershed conditions. This project will emphasize rerouting trails out of streamside management zones (SMZs), obliterating illegal trails, and bringing many illegal trail into the PNF trail system (therefore bringing these trails up to Forest Service standards by applying proper best management practices [BMPs] and managing up to FS standards). Illegal trails that have not been documented will be obliterated while implementing this project. Newly constructed or upgraded trailheads and trails will be constructed up to or surpass Forest Service Standards in accordance to the Forest Service Standard Trail Plan and Specification guidelines, along with the implementation of all Standard and Guidelines of the Forest Plan (USDA, 2015) and the Forest Service Handbook. This will assist in bringing the Prescott Basin Management Area up to the Forest Plan Desired Conditions – Rec-1 and Rec-2 Trails while maintaining or improving the Aquatic 1 desired condition (USDA, 2015).

Most national forests in Region 3 utilize the Water Erosion Prediction Project (WEPP) or a version of this model to predict sediment yields and cumulative effects for water quality and

associated beneficial uses. FS WEPP will be utilized to estimate sediment increases caused by the management activities for the GPTP (Table 1). Sediment is an appropriate measure to determine the effects of management activities on water quality and its associated beneficial uses on forested lands (Clingenpeel, 2003, Coats and Miller, 1981). At this time only sediment models have been developed to measure erosion rates and sediment delivery from forest management practices.

The analysis conducted in this Soil and Water Resources Section addresses the Forest Plan's Watershed Guideline 1: long-term hydrologic effects analysis should evaluate the level of disturbance, the type of activity, and the soil, geologic, and streamflow characteristics and expected recovery periods. Water resource impacts from the proposed treatments (Table 11 and 12), will be varied in scale and duration, with elevated sediment concentrations decreasing for two to three years but not to pretreatment levels (Chang, 2003; Coats and Miller, 1981). Other concurrent management treatments within the analysis area that directly impact this analysis include the approximate 1,500 acres of yearly prescribed burning, 500 acres of yearly mastication, 360 acres of yearly mechanical thinning, 500 acres of yearly hand thinning, temporary road construction and improvements of the approximately 264 miles of roads. The aspects just described, along with current land conditions, land type area, and road lengths and types are analyzed to produce an approximate annual decrease in 138 tons of sedimentation by the management activities of this project and cumulative effects of past, current, and future proposed projects.

Table 11 Soils and Hydrology Current Conditions and Proposed Actions

Watershed	Watershed Acres	Square Miles	Current Trail (mi) (FS-From INFRA data)	Proposed Trail Incorporation or development (mi)	Existing Trail to be Incorporated (mi)	New Trail (mi)	New Trailhead (Acres)	Current Gravel road (mi)	Trail Closure (mi)	Current Decommiss. Roads Associated with the Project (mi)	Future Road Closure or Conversion (mi)
Upper Skull Valley Wash	22148.1	34.6	12.34	3.59	-3.4	0.19		9.3			
Mint wash	39139.7	61.2	37	1.1	-1.1	0		1.2			
Willow Creek - Willow Creek Reservoir	15919.8	24.9	22.5	28	-17.5	10.5	1.2	9	5	2.01	1.18
Upper Granite Creek - Watson Lake	28704.3	44.9	45.9	17	-2.9	14.1	6.7	18.5			
Lynx Creek	26699.3	41.7	39.3	7.3	-3.7	3.6		24.7			
Groom Creek - Upper Hassayampa River	22943.8	35.8	25.43	15.8	-4.3	11.5		59.5			0.5
Total	**155555**	**243.1**	**182.47**	**72.79**	**-32.9**	**39.89**	**7.9**	**122.2**	**5**	**2.01**	**1.68**

Assumptions

Design Criteria

It is assumed all forest wide Standards and Guidelines and those applicable to the Prescott National Forest taken from the Forest Plan, guidelines from the Forest Service Manual (FSM), regional directives (USDA, 2015) and Forest Service Standard Trail Plan and Specification guidelines will be applied and adhered to throughout this project.

Sediment Model

The application of the sediment model should not be taken as absolute but as a method that can describe the effects from the range of alternatives and suggest where a greater risk with respect to water quality and aquatic biota exist. The model assumes that all burned areas recover fully after one year and all harvested areas recover after three years. These recovery rates are common in much literature and provide a realistic recovery value for the southwest and are appropriate for this level of analysis (Garten, 2006; Chang, 2003). As with any "predicted runoff or erosion value—by any model—will be at best, within plus or minus 50 percent of the true value" (Elliot et al., 1999). The model also assumes a worst case scenario, that all proposed treatments occur in 2017.

Private Lands

This analysis assumes that no substantial impacts to riparian areas, perennial, intermittent or ephemeral streams would occur; it is assumed BMPs would be adhered to on forested land other than National Forest System land.

Resource Indicators and Measures

Existing levels of erosion-based sediment were approximated from current land use activities. Estimates of erosion and sediment from current land uses have been made by using the land use estimates and average erosion coefficients for these practices. Measurements are in tons of sediment per year delivered to the streams systems. Increases in trail density and trail closeness to streams will correlate to increases in stream sediment. DC-Watershed-1: Water quality is sustained at a level that retains the biological, physical, and chemical integrity of the aquatic systems and benefits survival, growth, reproduction, and migration of native and desired nonnative aquatic and riparian species. Soil and vegetation functions in upland and riparian settings are retained or enhanced to facilitate precipitation infiltration and groundwater recharge. Watersheds support sustainable levels of forage for browsing and grazing animals, timber production, and recreation opportunities with no long term decline in watershed conditions.

Affected Environment

Existing Conditions

The PNF lies mainly within the Transition Zone (formally the Central Highlands) of Arizona and spans 1,250,000 acres. The Prescott NF forms the headwaters of the Verde, Hassayampa, and Agua Fria Rivers.

Historically, the Transition Zone of Arizona supported mixed conifer forests, ponderosa pine forests, mountain grasslands, pinyon-juniper woodlands, and chaparral shrub-land. While current vegetation includes this, many areas have deviated from the historic composition. The current composition of the Prescott NF is 37% Piñon -Juniper Evergreen Shrub, 25% Interior Chaparral, 11% Juniper Grasslands, 10% semi-desert Grasslands, 9% Ponderosa Pine – Evergreen oak / Gamble Oak, and a combination of Great Basin Grassland, Piñon – Juniper woodland, Riparian gallery forest, and Desert community equal the remaining 8%. Disturbances in this forest system included fire (both wild and anthropogenic), grazing (both historic and current), insects, diseases, storms (including ice damage), droughts and floods.

Climate

The Transition Zone in Central Arizona, similar to other areas in the state, is characterized by a cyclic climatic regime of winter precipitation, spring drought, summer precipitation, and fall drought. The average annual precipitation of 19 inches usually comes from the northwest in the winter and from the southeast in the summer. Winter precipitation, often snow at higher elevations, is associated with frontal storms moving into the region from the Pacific Northwest. Surface thermal heating in the winter is less pronounced than in the summer; upslope air movement is relatively slow; cloudiness is common; and precipitation is usually widespread and relatively low in intensity. The major source of moisture for summer rains is the Gulf of Mexico. This moisture moves into the Transition Zone from the southeast, passes over highly heated and mountainous terrain, rises rapidly, cools, and condenses. Summer storms, primarily convectional, are often intense and local rather than widespread. Summer rains typically begin in early July, breaking the prolonged spring drought and providing relief to the hot weather of June and July. Winter precipitation is more variable than summer in amount and time of occurrence from year-to-year. However, yearly variations in precipitation generally decrease with increases in elevation. Spring drought is often more detrimental to most plants and animals in the region than fall drought, due to the higher temperatures and wind conditions during the beginning of the growing season (USDA 1999).

Ecoregion - Geology

The Prescott National Forest is within the western section of the M313 ecoregion of Arizona – New Mexico Semidesert—Open Woodland—Coniferous Forest—Alpine Meadow Province (Bailey's Ecoregions)(Bailey et al., 1994).

As stated, the project area lies in the Arizona Transition zone, the area between the Santa Maria Mts. and the Bradshaw Mts. Geologically, the Transition Zone is similar to the Colorado Plateau, but most of the sedimentary rocks have been eroded away. Proterozoic Eon (Upper Pre-Cambrian time) granite and metamorphic rocks that are typical of earth's deep crust are widely exposed. Accumulations of Cenozoic volcanic rocks abound. The Mogollon Rim separates the Transition Zone for the Colorado Plateau. Typical of the Transition Zone, the area includes high peaks, tablelands, mesas, canyons, broad valleys, and low mountains. These features have been formed by several episodes of mountain building (orogeny) and crustal deformation. These forces produced complex geologic structures including fault-bounded basins and uplifted mountain masses. After a series of mid-Tertiary volcanic and deformation events, the basins accumulated extensive deposits of clastic and volcanic rocks. Drainage of the basins produced thick deposits of lacustrine limestone as well as spring related travertine limestones. A major unconformity, formed by long periods of erosion and non-depositional, separates the older Precambrian and Paleozoic rocks for the Cenozoic rocks. (Maslansky 1999)

Watershed

The soil and water resources of analysis area, the Transition Zone, offer a distinct biogeographic, climatic, and physiographic province (Baker 1999). A diverse ecotone between the Colorado Plateau and the Sonoran Desert ecoregions exist in this area (Baker 1999). The hydrologic boundaries of the analysis area fall within three distinct sub-regions, 1503-Lower Colorado, 1506-Salt River, and 1507-Lower Gila. Analysis will be conducted on 6 sub-watersheds within the three sub-regions; Upper Skull Valley Wash (HUC 150302030103), Mint Wash (HUC 150602010707), Willow Creek – Willow Creek Reservoir(HUC 150602020101), Upper Granite

Creek – Watson Lake (HUC 150602020102), Lynx Creek (HUC 150701020205), and Groom Creek – Upper Hassayampa River (HUC 150701030101) (Table 11 and 12).

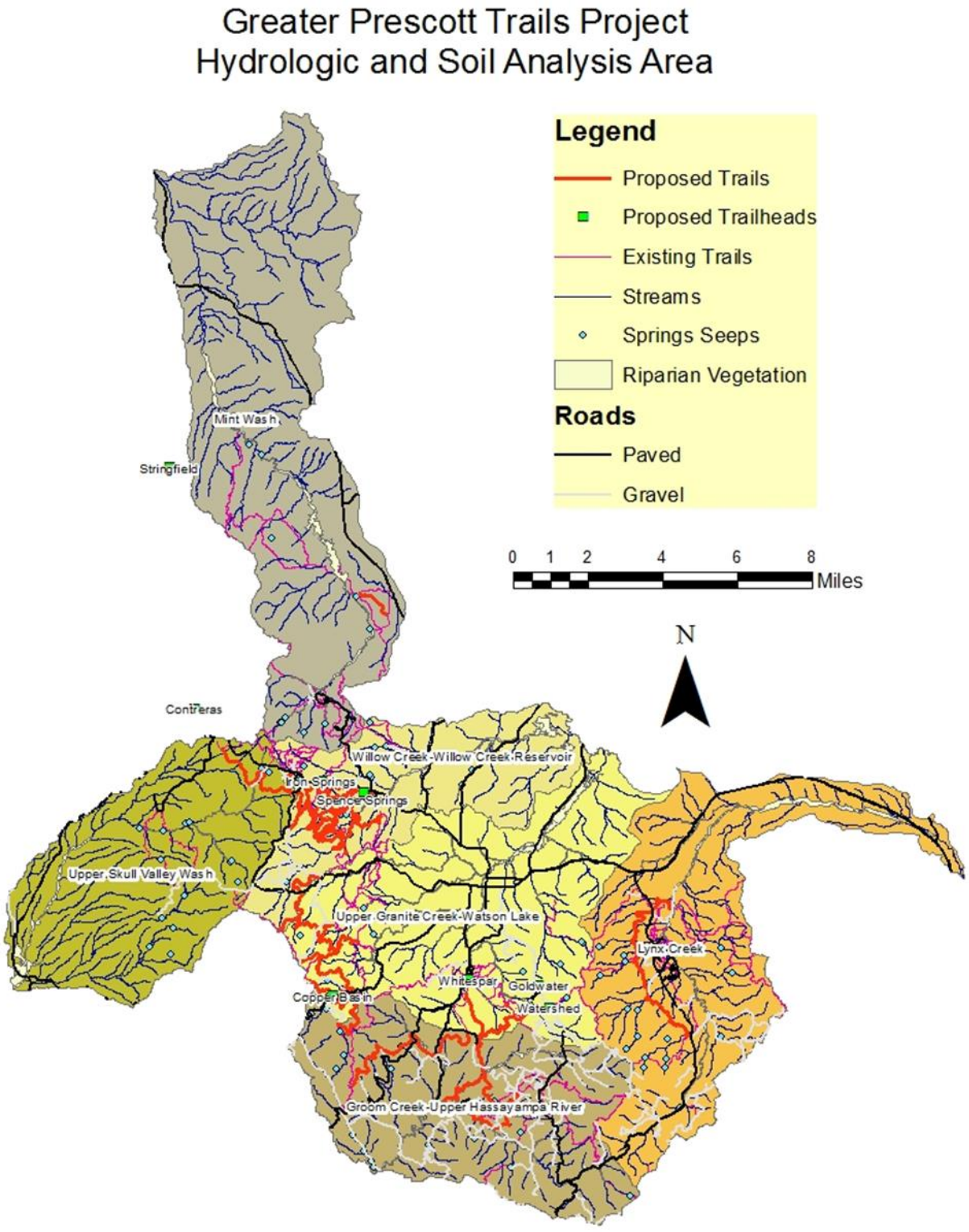

Figure 5. Water and Soil Resources Analysis Area

Named streams or waterways within the GPTP follow: (1) Within the Mint Wash sub-watershed; Mint Wash leaves the Mint Wash sub-watershed and flows into Williamson Valley Wash (2) Iron Springs Wash and Logan Wash flow into Upper Skull Valley Wash. Upper Skull Valley Wash and Dead Mule Canyon flow into Skull Valley Wash. These all exit Upper Skull Valley Wash sub-watershed into Cowghran Canyon. (3) Spence Creek drains into Willow Creek and are the two main drainages within the Willow Creek – Willow Creek Reservoir sub-watershed; these flow into the Willow Creek Reservoir. (4) There are many named drainages within the Upper Granite Creek – Watson Lake sub-watershed. Miller Creek, Butte Creek, Aspen Creek, Manzanita Creek, Banning Creek, Government Canyon and Slaughterhouse Gulch all flow into Granite Creek or Watson Lake reservoir. (5) The Groom Creek – Upper Hassayampa River sub-watershed also has many named drainages. Copper Creek, Little Copper Creek, Indian Creek, Groom Creek, and Wolf Creek all drain into the Hassayampa River. (6) Sawmill Gulch, Benjamin Gulch, and Salida Gulch drain into Lynx Creek, which is the primary drainage within Lynx Creek sub-watershed. Lynx Creek is a tributary to the Aqua Fria upon exiting the sub-basin. Many distinct yet unnamed drainages exist within each of the six sub-watersheds in the analysis area. Designated beneficial uses of these watersheds include fish consumption, recreation, and agriculture.

The majority of private land within the six sub-watersheds is forested (Table 12). Lynx Lake, Mountain Top, and White Spar campgrounds are within the analysis area and near many of the treatment areas. In addition to the established campgrounds there are many designated dispersed camp sites within the analysis areas. Camping areas that clear away vegetation, both developed and dispersed, increase erosion and sedimentation.

The following waters within the analysis area are on the Arizona impaired waters list: Butte Creek for *E.coli*; Granite Creek for low dissolved oxygen and *E. Coli;* Miller Creek for *E. Coli;* Manzanita Creek for *E. Coli;* Watson Lake for nitrogen, low dissolved oxygen, and high pH, all within the Upper Granite Creek -- Watson Lake sub-watershed. Willow Creek Reservoir is on Arizona impaired waters list for Ammonia (ADEQ 2014). Increases in sedimentation can increase Ammonia levels in waterways and, although more limited, an increase in sedimentation can also increase nitrogen levels.

Riparian Corridors

Riparian areas are areas with three dimensional ecotones of interaction that include terrestrial and aquatic ecosystems, that extend down into the groundwater, up above the canopy, outward across the floodplain, up the near-slopes that drain the water, laterally into the terrestrial ecosystem, and along the watercourse at a variable width (USDA, 2015). A riparian corridor is an administrative zone applied to both sides of a stream or alongside a pond, lake, seep or spring. Riparian Corridors and SMZ within the analysis area are found in the Prescott NF GIS directory. Design criteria on the application of Riparian Corridors are described in Chapter 2 of the Forest Plan (USDA, 2015).

Wetlands

Digital National Wetland Inventory (NWI) maps from the United States Fish and Wildlife Service are available for the entire GPTP (USFW, 2016). No wetland areas are found within the analysis area with exception to the mapped Riparian Corridors in Figure 5 and SMZs around the reservoirs. Springs within the boundaries of the proposed analysis area are associated with ephemeral, intermittent, and perennial streams. There are 93 documented springs or seeps within the analysis area. There is little documentation for current conditions of these springs. In the south-western section of the analysis area, four mapped springs lie near Aspen Springs Trail and

West Spruce Trail, adhere to or surpass guidelines in the Desired Condition Watershed 6 of the Forest Plan.

Roads

Within the GPTP analysis area, there are 264.1 miles of road; of those 122.2 miles are gravel or native material and are designed for periodic to permanent use in such activities as travel, recreation and access to home and recreation sites. State roads are mostly paved and account for little of total roads within the GPTP.

Proposed Action

The proposed management actions (Table 11) have a potential to increase erosion and sediment. Maintaining Riparian Corridors and SMZ's as well as following all forest management standards in the Forest Plan (USDA 2015), and the Forest Service Standard Trail Plan and Specification guidelines (NTDP 2014) will help to allay this. Water resource impacts due to trail construction are primarily temporary in duration and minor to moderate on site with elevated sediment concentrations for two to three years following trail construction (Grace, 2005; Aust and Blinn, 2004; Fulton and West, 2004; Chang, 2003; Clingenpeel, 2003; Coats and Miller, 1981). With the concentration of treatments and applying proper BMPs to already established trails, the model predicts an overall decrease in sediment throughout analysis area (Table 13).

Trailhead, trailhead creation, trails, trail creation, and associated activities have a potential to affect water quality of streams within the vicinity. Soil disturbance and soil compaction from use is the primary initiator to increase erosion, leading to increased stream sedimentation. Mountain bike trails have the highest probability to decrease water infiltration and increase surface water flow sediment on the trail, yet mountain bike trails have the smallest footprint (Wilson and Seney, 1994; Bjorkman, 1996; Marion, 2006; and White et al., 2006). Pack and Saddle trails have the highest probability for soil disturbance and overall soil movement; with less but similar impacts on an ATV trail system. Pack and saddle and ATV trails create similar disturbance. Pack and saddle trails will create a highly compacted subsurface layer with a highly weathered or churned up surface layer. ATV's churn and in effect weather the top soil quickly and create a compacted subsurface (Wilson and Seney, 1994; Bjorkman, 1996; Marion, 2006; White et al., 2006). Soil compaction can increase water volume/velocity and soil erosion. The concentrated water, if left uncontrolled can result in stream sedimentation. Following best management practices (BMPs) and Forest Service Standard Trail Plan and Specification guideline will greatly reduce sediment delivery to streams from trails. The Watershed Condition Classification Technical Guide also reflects this by addressing the density, location, distribution, and maintenance of the trail network (USDA, 2011). There is a detrimental effect to any watershed when an area is taken out of production; the Watershed Condition Framework states a ratio greater than one mile of trail or/and gravel road to 1 square mile of watershed has a detrimental impact to a watershed. Four of the six sub-watersheds in this analysis area have ratios greater than 1 (Table 12).

Nutrient and sediment delivery to streams correlate. As the density of overall vegetation decreases, intercepted rainfall and transpiration decreases, increasing the amount of surface water runoff, soil moisture, and subsurface interflow from the area (Chang, 2003). Sediment and nutrient delivery to streams often increases after disturbance to an area and is proportional to the area disturbed and maintained free of vegetation (Gucinski et al., 2001). Nutrient losses from a site and into a waterbody increase proportionately with sediment movement (Schultz, 1997).

Wetlands

If wetlands are found within or bordering the trail development area, refer to Forest Plan for forest wide guidelines (USDA, 2015). Proposed treatments will not affect any wetlands mapped by US Fish and Wildlife in the analysis area if standards outlined in the Forest Plan are followed.

Roads

No temporary roads will be reconditioned or constructed within the analysis area. Maintenance of existing roads and culverts would benefit hydrology and stream water quality by ensuring drainage culverts function properly and that the road bank maintains adequate vegetative cover. There will be or has been 2.79 miles of road decommissioned and 0.9 miles of road will be converted to administrative use only within the project area.

Environmental Consequences

The management activities proposed for the GPTP may have a variety of effects on soil and water resources; such as, erosion and sediment transportation, increased surface water temperature, increased flow, and increased sedimentation in streams. The analysis conducted concentrates on sediment delivered to stream, as this is greatly correlated with stream impediments (Debano and Schmidt, 1989; Marion and Wimpy, 2007).

Methodology

FS WEPP is utilized by the many forest within Region 3 and was used for this soil and water resource analysis. Existing and expected levels of erosion-based sediment were approximated from land use activities delivered to small streams (Dissmeyer and Stump, 1978). Estimates of erosion and sediment from these practices have been made by using the land use estimates and average erosion coefficients. The model assumes constant erosion coefficients over a specific land type and slope. The sediment prediction of this model should not be taken as absolutes but as a method that can describe effects from the range of alternatives and suggest where a greater risk with respect to water quality exists (Clingenpeel, 2003). Land areas, stream density, trail lengths, and road lengths were assembled using ArcMap 10.3.1.

Information Sources

Information for FS WEPP was gathered from GIS Map layers assembled from the USDA Forest Service, Prescott National Forest; Bailey et al., 1994; and National Wetland Inventory, USFW, 2016.

Spatial and Temporal Context for Effects Analysis

The analysis area is within the six 6th level watersheds of Upper Skull Valley Wash (HUC 150302030103), Mint Wash (HUC 150602010707), Willow Creek – Willow Creek Reservoir (HUC 150602020101), Upper Granite Creek – Watson Lake (HUC 150602020102), Lynx Creek (HUC 150701020205), and Groom Creek – Upper Hassayampa River (HUC 150701030101) (Table 1). Two additional sub-watershed, the Williamson Valley Wash and Tonto Wash, have proposed design features on them, but are minuscule in size and will have little to no overall impact on those sub-watersheds. The sediment model utilized for these findings was designed for analysis on 6th level watersheds (sub-watersheds) for project level analysis. This area captures effects that may be caused by the management activities of this project.

Project Design Features and Mitigation Measures

Project Design will follow standards put forth in the Forest Plan (USDA, 2015). Adherence to these design standards will satisfy the Forest Plan Area Goals, reflect and adhere to the Clean Water Act and the National Forest Management Act, and conform to Executive Order 11990 and Executive Order 11988. With the adherence or exceedance of Forest Service Standards, in accordance to the Forest Service Standard Trail Plan and Specification guidelines, along with the implementation all Standard and Guidelines of the Forest Plan (USDA, 2015), additional mitigations measures, such as hardening, armoring with additional rock and additional rolling dips, will be implemented were trails features lie within SMZs, on sensitive soils, or deemed pertinent to protect soil and water resources.

Table 12: Current Watershed Conditions

Huc-12	Watershed	Watershed Acres	Square Miles	% FS	Watershed Condition	Current Trail mileage (FS-From INFRA data) (Miles)	Proposed Added Trail Mileage	Est. Social (miles)	Gravel Roads	Ratio Trails : WS square mile	Ratio of Gravel Roads and Trails : WS square mile
150302 030103	Upper Skull Valley Wash	22,148.1	34.6	52	Functioning at risk	12.34	3.59	3.4	9.3	0.46	0.73
150602 010707	Mint wash	39,139.7	61.2	33	Functioning at risk	37.00	1.10	1.1	1.2	0.62	0.64
150602 020101	Willow Creek - Willow Creek Reservoir	15,919.8	24.9	39	Functioning at risk	22.50	28.00	17.5	9.0	1.73	2.09
150602 020102	Upper Granite Creek - Watson Lake	28,704.3	44.9	40	Functioning Properly	45.90	17.00	2.9	18.5	1.42	1.83
150701 020205	Lynx Creek	26,699.3	41.7	58	Functioning at risk	39.30	7.00	3.7	24.7	1.13	1.72
150701 030101	Groom Creek - Upper Hassayampa River	22,943.8	35.8	84	Functioning at risk	25.43	15.80	4.3	59.5	1.23	2.89
	Total	**155,555.0**				**182.47**	**72.79**		**122.2**		

Sediment Model Results (Summary)

Erosion, sediment, and sediment concentration estimates were made on the combination of proposed treatment activities. Approximately 72.79 miles of trail addition or development, trailhead development on 7.9 acres, 5 miles of trail obliteration, and 1.7 miles of road restricted to administrative use only are being proposed in this Forest Service action. By applying proper BMPs to the established 33 miles of non-FS trails and the building of 40 miles of trails (to FS standard with proper BMPs); annual sediment levels would be reduced from approximately 37.7 to 10.2 tons. With the conversion of 1.7 miles of roads to administrative use, the total annual sediment reduction is 112 tons (Table 13). The decrease in sediment is dependent to trail maintenance; maintaining out-sloped trails and gradient reversal every 40 feet on trails with a 2-10% gradient and every 20 feet on trails with a gradient greater than 10%.

Table 13: Sediment Reduction From BMPs and Road Conversion

Watershed	Current Trail mileage (FS-From INFRA data) (mi)	Proposed Trail Incorporation or development (mi)	Existing Illegal Trails to be Incorporated (mi)	Tons Sediment from existing trails to be incorporated prior to BMP's	Tons Sediment from BMP implimentation and New Trails	Sediment Reduction From applying BMPs and New Trails	Tons Sediment From Trailhead Develop-ment	Tons Sediment reduction from road mitigation	Total Sediment Reduction (tons)
Upper Skull Valley Wash	12.34	3.59	-3.4	5.51	0.94	4.57			4.57
Mint wash	37	1.1	-1.1	0.65	0	0.65			0.65
Willow Creek - Willow Creek Reservoir	22.5	28	-17.5	21.26	3	18.26	3.6	95.73	110.39
Upper Granite Creek - Watson Lake	45.9	17	-2.9	3.31	2.37	0.94	22.6		-21.66
Lynx Creek	39.3	7.3	-3.7	4.37	0.79	3.58			3.58
Groom Creek - Upper Hassayampa River	25.43	15.8	-4.3	2.57	3.14	-0.57		14.75	14.18
Total	**182.47**	**72.79**	**32.9**	**37.67**	**10.24**	**27.43**	**26.2**	**110.48**	**111.71**

Cumulative Effects of the Proposed Action

Other past, present and foreseeable future activities within the project area watersheds also have a potential to interact cumulatively to affect water resources. These activities can include but are not limited to controlled burning, mastication, mechanical thinning, machine piling, invasive species suppression and control activities, invasive exotic plant control, system, county, state and special use road maintenance, temporary road construction and maintenance, timber sale activities, prescribed burning, gully restoration/rehabilitation, various types of land uses associated with forestry, agriculture, rural and urban development, golf courses and lake management.

In the past five years 1,239 acres of mechanical thinning and 2,285 acres of hand thinning occurred. In the next five years 1,800 acres of mechanical thinning and 2,500 acres of hand thinning is planned.

All of these actions would have or will supply additional sediment within the GPTP area for three to five years following the treatments.

Prescribed burning within the area has the potential to increase sediment runoff and increase water yield. A low intensity burn would minimize this. Generally, during low intensity surface burns, woody vegetation recovers quickly along with warm season grasses. In the past five years, approximately 1,900 acres of machine pile burning, 3,776 acres of broadcast burning, and 1,000 acres of mastication occurred. Plans for the next five years include 1,800 acres of machine pile burning, 7,500 acres of broadcast burning, and 2,500 acres of mastication. All of these actions would have or will supply additional sediment within the GPTP area for three to five years following the treatments (Table 14).

Table 14: Cumulative Effects – Soils and Hydrology, Tons of Sediment

Watershed	Watershed Background	Current FS Trails	Proposed Trail Incorporation or development	Current Gravel road	Trailhead	Trail Closure	Road Closure	Burning	Harvest	Mastication	Cumulative Effects	No action tons of sediment	% Reduction
Upper Skull Valley Wash	1993.33	3.33	0.94	274.35				410.16	100.18	18.87	2801.15	2805.72	0.16
Mint wash	3522.57	5.93	0.00	35.40				460.40	112.45	21.19	4157.93	4158.58	0.02
Willow Creek - Willow Creek Reservoir	1432.78	3.60	3.00	265.50	3.6	-1.62	-94.11	221.38	54.07	10.19	1898.39	2008.78	5.81
Upper Granite Creek - Watson Lake	2583.39	7.35	2.37	545.75	22.6			409.43	100.00	18.84	3689.72	3668.06	-0.59
Lynx Creek	2402.94	6.29	0.79	728.65				551.36	134.67	25.37	3850.06	3853.64	0.09
Groom Creek - Upper Hassayampa River	2064.94	4.07	3.14	1755.25			-14.75	685.54	167.44	31.54	4697.17	4711.35	0.30
Total	13999.95	30.57	10.24	3604.90	26.20	-1.62	-108.86	2738.25	668.80	126.00	21094.43	21206.14	0.53

Activities on Private Lands

The majority of the GPTP watersheds, including private lands, consist of all vegetation composition located within the transition area; mixed conifer forests, ponderosa pine forests, mountain grasslands, pinyon-juniper woodlands, and chaparral shrub-land. Trail development and timber removal activities on private lands are expected to contribute to both short-term and long-term adverse impacts to water resources in the GPTP watersheds and would interact cumulatively with the proposed vegetation management activities. Overall, these adverse impacts are not expected to be significant since the majority of the watershed is forested or vegetated, providing protective buffers along streams. The potential for timber removal or trail development on private land under the Proposed Action to cumulatively contribute to adverse impacts on water resources would be minimal over the short- and long-term.

Required Monitoring

The Forest Plan provides for the protection, restoration, and monitoring of riparian ecosystems, wetlands, and aquatic systems and for assuring that aquatic habitat conditions are suitable to maintain native aquatic communities. Water quantity and quality, atmospheric deposition, in-stream large

woody debris, and aquatic species passage will be monitored. Comparisons of reference and managed reaches will be used to indicate the effects of management activities on aquatic habitat and communities. During the implementation of the management activities watershed conditions, improvement needs, water quality, soil and water standards, and the implementation of BMPs, specifically Riparian Corridors and SMZ's, will be monitored.

Summary

Following standards and guidelines in the Forest Plan, on current conditions the implementation of the proposed trail design, sediment delivery for the 6 sub-watersheds of the GPTP will have a decrease in sediment of 0.53%, with the Willow Creek – Willow Creek Reservoir sub-watershed having the greatest overall annual reduction of 5.8%. The Upper Granite Creek –Watson Lake sub-watershed has a slight increase in sediment delivery. The application of proper BMPs to the existing 33 miles of trails to be incorporated into the FS trail system will reduce annual sediment input by 27.4 tons. Even though these actions will decrease overall sediment production throughout these watersheds, the FS is still placing an additional 73 miles of trails into the system. According to the Watershed Conditioning Framework a watershed with a ratio greater than 1:1 of road or trail mile to square miles of watershed, the watershed is negatively affected. Increasing overall trail mileage increases this ratio in the watersheds, most of which are currently at or beyond the functioning at risk for this category (Table 12).

No Action

With no trail or trailhead construction, there would be no temporary increased soil movement from disturbance and vegetation removal. The undesired impacts from poorly located or designed unauthorized social trails would continue to have negative impacts to soil and hydrology resources.

Wildlife

Background

The existing wildlife habitat in the Prescott Basin includes the presence and use of the developed and dispersed recreation facilities. Most animals within the Basin have acclimated to the presence and activities of humans along trails including motorized and non-motorized uses. Typical wildlife in the project area include mule deer, javelina, passerine birds, lizards, snakes, rabbits, raptors, and bobcats. These can all be observed near the existing trail system. Vegetation type in the project area is predominantly ponderosa pine with Gambel oak and some juniper. Other areas have a variety of chaparral species.

Existing Conditions

Endangered Species: The Mexican spotted owl occurs within the project area; one PAC (Protected Activity Center) in Planning Area B, three PACs in Planning Area C, and four PACs in Planning Area D.

Mexican spotted owl critical habitat occurs within the project area in Planning Areas B, C, and D. The Boundary Wildland Urban Interface Project area is not designated as critical habitat (FRVol.69, No.168, page53215). Those areas within critical habitat polygon and outside of the Boundary project area are considered critical habitat.

In Planning Area B, Trails 743, 738, 744, 366, 741, 742, 737, 264-ext and the Copper Basin Trailhead all lie within the Mexican spotted owl CH polygon. Of the total 17.1 miles in this planning area, 3.6 miles are existing trails and 13.5 would be new construction. The Copper Basin Trailhead would be new construction within the Mexican spotted owl CH polygon.

In Planning Area C, the first ¼ mile of Trail 382 and Trail 751 lie within Mexican spotted owl CH polygon. The Goldwater Trailhead is partially existing and lies within the Mexican spotted owl CH polygon as well.

In Planning Area D, the Watershed Trailhead lies within the Mexican spotted owl CH polygon.

Bald and Golden eagles: Existing bald eagle winter roost on the south shores of Upper and Lower Goldwater Lakes. The existing trail has been in place for over 10 years. Golden eagles are occasionally seen during the winter bald eagle survey each January. Bald eagles have been documented nesting near Lynx Lake for the past 10 years.

Migratory Birds: Based on the trail locations in the various ponderosa pine, chaparral, and some pinyon juniper vegetation types within the project area, 13 species of migratory birds might be expected to occur within the project area. The nearest Important Bird Area to the project area is the Willow and Watson Lake IBA.

Regional Forester Sensitive Species: Out of 30 Regional Forester Sensitive species on the Prescott NF list, six species are known to occur within the project area. Peregrine falcons nest at both Granite Mountain in Planning Area A and Thumb Butte in Planning Area B. Bald eagles occur at both Goldwater and Lynx Lakes. Northern goshawks occur in Planning Areas B and C at Highland Pines and Kendall Camp, respectively. Proposed Trail 738 lies along the boundary of the historic goshawk PFA (post-fledging family area). Lowland leopard frog habitat occurs in Mint Wash in Planning Area A and along the Hassayampa River in Planning Area C. Individual plants of sensitive species could be occur near trails or realignments.

Focal species: Focal species within the project area include northern goshawks in the pine PNVT, western scrub jays in the chaparral PNVT, and macroinvertebrates in the aquatic habitat of Mint Wash and Hassayampa River.

Environmental Consequences

Endangered species: None of the proposed actions occur within any Mexican spotted owl PACs. In Planning Areas B and C, the non-motorized trails are over ½ mile from the PAC boundary and connecting trails outside of the PACs. In Planning Area D, the proposed motorized trail 745 is over ½ mile outside of the Smith Ravine PAC and designed to direct use in the opposite direction of the PAC with no motorized trails connecting through the PAC.

Within Mexican spotted owl critical habitat, habitat was assessed and areas meeting the definition for protected and recovery were identified and are displayed on the maps in Appendix D of the wildlife specialist report. For all of these proposed trail actions, none of these proposed trail actions lie where there is identified protected or recovery habitat providing primary constituent elements for Mexican spotted owl. Therefore, this project would not impact Mexican spotted owl critical habitat.

With no trail or trailhead actions in the No Action alternative, there would not be any effects to Mexican spotted owls or their critical habitat.

Eagles: The existing trail south of Goldwater Lake has been in place for over 10 years and has not been identified as a problem or to be impacting roosting eagles. The proposed trail changes in this area may be expected to slightly change the timing, intensity, or duration of trail use near the eagle roost. Constructing new non-motorized trails may increase the trail use patterns in the area as more loop options are created. The trail use would not be expected to cause any injury to any bald eagles. There are no known nesting bald or golden eagles near any of the proposed trail alignments. Eagle foraging on the south side of the Upper and Lower Goldwater lakes may simply shift away from the trail locations during times of heavier trail use. The main time the lakes are used for foraging by the eagles is during the winter months from October into March when weather is colder and snow can be present. These conditions may limit the increase in trail use during this time period. The use on the trails would not be changed or increased enough to preclude eagles from foraging at the lakes or to substantially interfere with normal feeding behavior. There are no proposed trail actions near the known bald eagle nest locations in the Lynx Lake area.

For the No Action Alternative, the existing conditions are not known to be having any discernible impacts to winter roosting eagles or nesting bald eagles.

Migratory Birds: Impacts to migratory bird habitat include possible displacement during nesting, slight displacement from foraging, and an indiscernible change in cover. Most migratory birds habituate to trail use shortly after establishment. This project may impact individual birds for a short time during construction and initial trail use. In the long term, designing a trail system to meet recreation demands will provide better options for both wildlife and forest visitors through higher quality habitat and wildlife viewing opportunities. While the Circle Trail is connected to the trail system within the Willow and Watson IBA, the proposed trail actions are not expected to have a discernible impact on the trail use patterns in the Willow and Watson Lakes IBA. Therefore this project would not have any impacts to the Conservations issues for the IBA.

Regional Forester Sensitive species: There are no proposed trail actions in the immediate vicinity of either peregrine nesting location. In both planning areas, the proposed trail actions do not occur in typical peregrine foraging areas or habitats and would not be expected to impact or change peregrine use of its habitat.

Proposed Trail 738 lies along the boundary of the historic goshawk PFA. Given the activity of people and homes adjacent to the area and current use by folks walking the existing roads and trails in the center of the PFA, this additional non-motorized trail on the edge of the nesting area would not be expected to cause any goshawks that might use the area to abandon a nesting attempt. None of the trail actions in Planning Area C are near the goshawk PFA habitat or would have an impact on goshawks or their habitat.

Proposed Trail 748 lies away from the lowland leopard frog habitat topographically and would not have an impact to the habitat. Proposed Trail 750 lies along the Hassayampa River. Trail design standards and BMPs for implementation would be expected to protect riparian and aquatic habitat per Forest Plan Guides-WS-4, 5, and 6.

Individual plants of sensitive species could be impacted by trail maintenance or realignment. Given the linear nature of trail alignments through vegetation on the landscape, the trail actions would not be expected to impact entire populations of sensitive plants, but rather, possibly individuals. Trails do not typically change the vegetation away from the trail alignment.

Cumulative effects

The impacts from this project are a small fraction of the impacts from the larger Circle Trail Project and essentially coincide with impacts from the previous project. There would not be any discernible cumulative effects from this project.

No Action

With no trail actions, there would not be any impacts from disturbance, noise or vegetation removal. The undesired impacts from poorly located or designed unauthorized social trails would continue to have negative impacts to soil, vegetation and hydrology resources.

The impacts from the No Action alternative would be different from the action alternative and therefore would not be cumulative with the Circle Trail project.

Focal Species: Impacts to focal species will be assessed and monitored per the Forest Plan Monitoring Plan.

Cultural Resources

Background

The Prescott National Forest's cultural chronology begins with the Archaic Period and continues through to the Pueblo IV period. Cultural manifestations in the PNF include the Prescott Culture, Hohokam, Cohonina, and Sinagua, followed by the Yavapai. Historic mining (1860s) and railroad operations (1880s) also add to the rich history of the Prescott region along with homesteading, a military presence, logging, and ranching.

Prehistoric and historic sites in the project area have the potential to increase the knowledge and interpretation of human activities (habitation, construction, trade, and movement). Sites that are deemed unevaluated for the National Register of Historic Places (NRHP), sites that are eligible for the NRHP, and sites that are on the NRHP are of particular importance.

Methodology for Analysis: Heritage evaluation is based on record searches from previous survey projects conducted between the 1970s and 2016. Older surveys (pre-2001) were replotted on current GIS maps in each of the Sub Areas. Site summaries (dimensions, content, etc.) were also noted. Site surveys and project surveys completed prior to 1987 are considered invalid and will need a new 100% site survey.

Existing Conditions

Affected Heritage Resources: The proposed trail system additions occur primarily in the Prescott Basin area, specifically Emmanuel Pines in Area B. This area has a high archaeological site density of both prehistoric and historic sites. These sites are either located in close proximity to the proposed trails or they are located directly on the proposed trails.

Combining all Areas, there are (77) archaeological sites within 100 meters of proposed trails that need to be inventoried onsite to assess potential site degradation in conjunction with the proposed trail system and ensure avoidance. These sites include prehistoric habitation structures, tool processing areas, ceramic and lithic artifact scatters as well as historic camps, mining and railroad sites.

One proposed trailhead, Spence Springs, has a large multi-component (prehistoric/historic) site.

Environmental Consequences

The large multi-component (prehistoric/historic) site at proposed trailhead, Spence Springs, will require mitigation if the current trail head plan moves forward. Site mitigation by outside archaeological contractors could include preliminary test pits and surface collections during an initial phase. The subsequent phase could include more extensive excavation, artifact analysis, tribal and SHPO consultations.

Approximately 5.6 miles of new trail segments will need to be surveyed.

Until all proposed trails, trailheads, and heritage resources have been surveyed and inventoried, the potential impacts from human, animal, and motorized activity will not be clear. To ensure avoidance of cultural resources, trails may need to be realigned or closed off completely. As GIS maps and the proposed trail system are updated, Heritage Resource site plots may increase or decrease.

No Action

With no new trail or trailhead construction, there would not be any impacts to cultural resources from no action.

Range and Invasive Species

Background

The proposed trail system additions occur mainly in the Prescott Basin area. A large portion of this area has been closed to grazing for various reasons such as protection of a municipal watershed, lack of capable grazing lands in densely forested vegetation types, or to emphasize recreational uses. As such, this project will have minimal effect to existing grazing operations that are permitted on the Prescott National Forest.

Existing Conditions

Affected Range Resources

Nine of the proposed new trail sections have portions within active grazing allotments, while two proposed trailheads occur on active grazing allotments. Proposed new trail segments occur on the Burnt Ranch/Cold Springs Allotment and the Big Bug Allotment. The Burnt Ranch/Cold Springs Allotment is a yearlong allotment that can have up to 239 head of cattle in a given year. In 2015 there were 125 head of cattle authorized. Cattle are moved through pastures on a rotational basis and would not remain in the same pasture for more than 3 months at a time. The Big Bug Allotment can have up to 140 head of cattle that are authorized yearlong. This allotment also has many pastures, and cattle would be present for a few months in any one pasture.

The proposed Stringfield trailhead occurs on the Granite Allotment that can have up to 225 cattle on a seasonal basis from October 1st through March 31st. The proposed Contreras Trailhead is on the Contreras Allotment that is grazed yearlong by up to 100 cattle.

Environmental Consequences

Constructing trails and trailheads can remove existing vegetation that serves as forage for cattle. The amount of forage removed would be negligible to the grazing operation as a whole and would not affect the carrying capacity of the allotment.

The greatest concern to grazing operations would be that as trails pass through fences that separate pastures on allotments, there could be gates left open. Grazing allotments are managed so that forage plants are grazed for only a small portion of the year, typically 3 months or less, then cattle are removed to allow the plants to regrow. If gates are left open, cattle can access pastures not scheduled for grazing. This has consequences for both proper use of the forage resource and for the time and effort needed for the rancher to manage the cattle. When there are reports of cattle in the incorrect pasture, the Forest Service grazing permit administrator will contact the grazing permit holder and instruct that person to remove the cattle by a certain date. Repeated occurrences of cattle in the wrong pasture can lead to suspension or cancellation of the term grazing permit.

Mitigation Measures

To avoid gates being left open, it is essential to properly design gates so that trail users can easily close them, or provide walk-throughs where the trail passes through a barbed wire cattle fence. Walk-throughs may not be preferential on mountain bike trails. Where gates are used there should be signage on the gates telling trail users that gates must be kept closed. Trails that will receive equestrian use should have gates that can be opened and closed while on horseback. Gates should have easy latching mechanisms. Self-closing gates have been used on some forests with success. At trailheads there should be either walk-throughs or good quality equestrian gates.

Trail user conflicts with cattle are possible. Signage about cattle being in the area can educate forest users about the multiple use nature of Forest Service lands.

Invasive Plants Species

Existing trails in the Prescott Basin area are known to have populations of Dalmatian toadflax on or near trails. There are also some occurrences of knapweed (Russian or spotted). The act of trail construction can spread weed seeds by using tools or equipment that have not been properly cleaned of mud or debris that can carry invasive plant seeds. Constructing a trail or trailhead exposes bare mineral soil that is susceptible to colonization by invasive plants.

No Action

There would be no notable impacts to range resources or invasive plants from the No Action alternative.

Agencies and Persons Consulted

The Forest Service consulted the following individuals, Federal, State, tribal, and local agencies during the development of this environmental assessment:

Tribes

The following tribes were consulted: Fort McDowell Yavapai Nation, Hopi Nation, Hualapai Tribe, Yavapai-Apache Nation, and Yavapai-Prescott Indian Tribe.

Federal, State, County, and Local Agencies and Organizations

Numerous Federal, State, county, and local agencies and organizations have been consulted in development this EA. Complete mailing lists for the scoping periods are available in the planning record. Some of the agencies consulted include:

Federal

U.S. Department of Agriculture
- Rural Development

U.S. Department of the Interior
- Bureau of Land Management
- Fish and Wildlife Service

State

Arizona Game and Fish Department

Arizona State Parks
- Arizona OHV Ambassador Program

Arizona State University

Northern Arizona University

University of Arizona

County

Yavapai County
- Board of Supervisors
- Regional Trails Planning
- Trails Committee
- Roads Department

Local Municipalities

City of Prescott

City of Prescott Valley

Town of Chino Valley

Town of Jerome

Unincorporated Communities

Walker

Others

Numerous groups and individuals participated in the process through written comments and by attending public meetings. Groups consulted include:

APS

Arizona Conservation Experience

Back Country Horsemen of Central Arizona

Center for Biological Diversity

Chino Valley Parks & Recreation Advisory Committee

Community Forest Stewardship Forum

Community Forest Trust

Embry Riddle Aeronautical University

Emmanuel Pines Camp

Forest Trails Homeowners Association

Friends of Arizona Trails

Highland Center for Natural History

Highland Pines Homeowners Association

International Mountain Bicycling Association

National Wild Turkey Federation

Open Space Alliance

Prescott College

Prescott Hiking Club

Prescott Mountain Bike Alliance

Prescott Nature Walkers

Prescott Outings Club

Prescott Open Trails Association

Prescott Saddle Club

Prescott Trail Riders

Prescott Trail Safety Coalition

Prescott Chamber of Commerce

Prescott Valley Chamber of Commerce

Sierra Club, Grand Canyon Chapter

The Nature Conservancy

Upper Verde Wild and Scenic River Steering Group

Verde Valley Cyclists

Volunteers for Outdoor Arizona

Willow Springs Girl Scout Camp

Yavapai College

Yavapai Trails Association

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Appendices

Appendix A.

Project Mitigations and BMPs

All trails authorized through this proposal will be accurately mapped and flagged on the ground before construction. Efforts will be made to follow the proposed alignment as close as possible during layout with the following resource objectives guiding implementation.

1. **Cultural Resource Mitigation Measures:**

   The large multi-component (prehistoric/historic) site at proposed trailhead, Spence Springs, will require site mitigation if the current trail head plan moves forward. Site mitigation by outside archaeological contractors could include a site testing plan. Site testing and possible excavations will require SHPO and tribal consultation. Site testing could show that more archeological work is needed.

   Approximately 5.6 miles of new trail segments will need to be surveyed.

   To ensure avoidance of cultural resources, trails may need to be realigned or closed off completely. As GIS maps and the proposed trail system are updated, Heritage Resource site plots may increase or decrease.

   All known sites would be protected as directed by Forest Archaeologist and detailed in an archaeological clearance report.

   Prior to implementation, all sites flagged for avoidance will be re-checked to make sure all flagging remains in place. This is especially important if there has been a lapse in time between flagging and implementation.

   If sites are found during project layout or implementation, these activities would cease in the area of the site until a Forest Service archeologist can assess the discovery.

2. **Wildlife**
   Final trail alignments in area B (outside of the Emmanuel Pines), area C, and D that are located in Mexican Spotted Owl Critical Habitat will be coordinated with and require final approval from the forest's wildlife specialist

3. **Soils**
   If a final trail alignment falls within a high risk area, 40% or greater slope gradient, and/or severe plasticity soils, coordination will occur with the forest's soil's specialist before construction to ensure proper documentation and adherence to Best Management Practices (BMPs)

4. **Hydrology**
   Standards which reduce sediment include: out-sloped trails and gradient reversal every 40 feet on trails with a 2-10% gradient and every 20 feet on trails with a gradient greater than 10% will decrease sediment. If a final trail alignment falls in a Streamside Management Zone (SMZ), coordination will occur with the forest's hydrologist and BMPs will be established to ensure

proper mitigation for protection of these areas. Additional mitigations measures, such as hardening, armoring with additional rock and additional rolling dips, will be implemented where trails features lie within SMZ's, on sensitive soils, or deemed pertinent to protect soil and water resources.

5. **Range Mitigation Measures:**
   To avoid gates being left open, it is essential to properly design gates so that trail users can easily close them, or provide walk-throughs where the trail passes through a barbed wire cattle fence. Walk-throughs may not be preferential on mountain bike trails. Where gates are used there should be signage on the gates telling trail users that gates must be kept closed. Trails that will receive equestrian use should have gates that can be opened and closed while on horseback. Gates should have easy latching mechanisms. Self-closing gates have been used on some forests with success. At trailheads there should be either walk-throughs or good quality equestrian gates.
   Trail user conflicts with cattle are possible. Signage about cattle being in the area can educate forest users about the multiple use nature of Forest Service lands.

Soils and Hydrology Best Management Practices and Protection Measures

The following are recommended practices to mitigate the risk of sedimentation:

- Stabilizing slopes, creating natural vegetation buffers, diverting runoff from exposed areas, controlling the volume and velocity of runoff, and conveying that runoff away from the construction area all serve to reduce erosion.
- During trail construction, minimize the amount of soil disturbance at stream crossings.
- Trail construction is best done during the dry months when soil saturation and water levels are at their lowest.
- The three most important factors to consider during trail construction are the character of the land itself (soil, slope, and vegetative cover), the type of expected use, and the volume of that expected use.
- Some trail construction areas may need to be stabilized if heavy traffic is expected on the trail.
- Install temporary erosion control measures before construction of new trails begins. Keep them in place and maintained during construction and remove them only after the site has been stabilized.
- In areas of high traffic or steep slopes, armor the trail with large material and increase the occurrences of gradient reversal.

Invasive Species Management

The following are recommended practices to mitigate the risk of spreading invasive species on new and existing trails (**From Guidance for Invasive Species Management in the Southwestern Region):**

Best Management Practices (BMPs) that may be implemented to prevent establishment of invasive plants by off- road vehicles and equipment include—

- Map invasive weed-infested areas and establish measures such as no-travel zones to prevent spread from these areas. Ensure that areas designated as open to cross-country travel under the Travel Management Rule (36 CFR 212.51) are actively managed for weeds.
- Locate weed-free areas where project equipment can be staged prior to commencement of project activities.
- Avoid invasive species populations when feasible and minimize spread of invasive species during any soil disturbing activities.

Measures that can be taken to prevent spread of invasive weeds in recreational areas include—

- Post messages on weed awareness and prevention practices at strategic locations such as trailheads, roads, boat launches, and forest entrances. Messages should discourage picking of unidentified "wildflowers" and discarding them along trails or roadways.
- Promptly post sites if invasive plant species are found and, if feasible, close access until infestation is controlled. In areas susceptible to weed infestations, limit vehicles to designated and maintained travel routes.
- Encourage public land users to inspect and clean motorized and mechanized trail vehicles of weeds and their seeds before recreating on public lands. If practical, provide facilities for cleaning contaminated vehicles and equipment.
- Annually inspect all campgrounds, trailheads, and recreation areas that are open to public vehicle use for weeds and treat new infestations. Chronic weed infestations should be assessed as to why they are occurring, and steps should be taken to mitigate or reduce the risk of infestation. Consider seasonal or full time closure to campgrounds, picnic areas, and other recreation use areas until weeds are reduced to levels that minimize potentials for spread.
- Maintain trailheads, boat launches, outfitter and public camps, picnic areas, airstrips, roads leading to trailheads, and other areas of concentrated public use in a weed-free condition.
- Inspect and document travel corridors in recreation sites for weeds and treat well before seed production. In areas susceptible to weed infestation, limit vehicles to designated travel routes.

Appendix B.

Response to Comments

Ltr #	Cmnt #	Commenter Name	Comment	Response
1	1	Maxine Tinney	This letter is being written to take the Opportunity to Comment on the Greater Prescott Trails Mid-Term Project, with the purpose to prevent problems which have been experienced from trails being place adjacent to The Ranch at Prescott. My husband and I normally use and appreciate the Prescott Area Trails a few times per week. On 20 September 2016 *The Daily Courier's Public Notices* announced a 30-day Opportunity to Comment on the Greater Prescott Trails Mid-Term Projects with a map showing NO New Trails, No Proposed Trails and No Reroute Trails, only the original 0126 and 0062 Trails (part of Map_6_GPTP_Area_D dated 10/19/2016 showing The Ranch at Prescott and surrounding trails). The map does show the Badger "P" Mountain Trail that was apparently authorized and constructed in 2015, but did not appear on the original March 2015 Plan Map. I support the Greater Prescott Trails Mid-Term Projects dated 10/19/2016 showing NO New Trails and NO Proposed Trails and No Reroute Trails near The Ranch at Prescott. The following attached pages will explain the problems within the Ranch at Prescott from adjacent trails, such as the Badger "P" Mountain Trail in such close proximity.	Thank you for your input. This current proposal does not include any new trail work near The Ranch at Prescott. We are completing some reroutes of existing trails and one new trail in the area. These were approved in a previous analysis and decision dated May 2015.
1	2	Maxine Tinney	Background Information relating to Greater Prescott Circle Trails: There was a Greater Prescott Trails Short-Term Project in March of 2015, but I was not aware of a Public	The development of the Prescott Circle Trail and the associated environmental assessment occurred in 2010 and is not

			Notices to Comment on the proposal. It was just in the past year that I became aware of this document of a Not Authorized Proposed Circle Trail on Arizona Trust Land to the west of The Ranch, and a Proposed Badger Trail #329 on National Forest Land (shown left below, Map_4_Ranch_badger_2_2015) dated 03/05/2015). Note: There was a Badger "P" Mountain Trail constructed and became operational in 2015, which is not shown on the March 2015 original Proposed Map, but is shown completed on the subsequent maps. In about September/October of 2015, my husband and I secured a copy of the June 15, 2015 *Guide to the Prescott Circle Trails* and noted Segment 6, Page 12 of the Future Reroute of the Turley Trail and Reroute of Trail 126 Boy Scout (shown right above). On March 20, 2016 *The Daily Courier* had an article "Public input sought on Prescott Trail System" inviting the public to attend a "Greater Prescott Trails Planning Mid-Term Project, takes place from 6-8 p.m. on Monday, March 28, at the Boys and Girls Club, 335 East Aubrey Street, Prescott" and "Details on the individual trail proposals, trailhead proposals, and maps may be viewed at http://www.fs.usda.gov/project/?project=48048". My husband and I attended the meeting. Our Comments about these trails were submitted in two parts on 29 March 2016 and 3 April 2016 to comments-southwestern-prescott-bradshaw@fs.fed.us. Most of my and my husband's previous comments from March and April 2016 are now included in the 09-15-2016 Greater Prescott Trails Mid-Term Projects Preliminary Environmental Assessment link at	part of the Greater Prescott Area Trails Mid-Term projects. Thank you for your interest and participation in our trails planning efforts.

			GPTP_Midterm_DRAFT_EA (PDF 2350kb), Web Pages 60-62, Document Pages 54-56.	
1	3	Maxine Tinney	Due to situations which have arisen in The Ranch at Prescott during the past several months, it is felt by myself and a few other Ranch residents that you should be aware of various incidents within The Ranch at Prescott and why there should be no further Trails in close proximity to The Ranch at Prescott. Liability issues arising from trail users crossing private property to access the Badger Mountain Trail November 9, 2015, at approximately 9:30 a.m. to about 11:15 a.m. seven vehicles, (one, a white truck which bore the City of Prescott's Mile High Trail System insignia) drive to the cul de sac near to 208 Echohills Circle in The Ranch at Prescott. The drivers/passengers of the seven vehicles then proceed to offload mountain bikes and transit Private Ranch Property (YCP #115-01-065) and State Trust Land to access the Badger "P" Mountain Trail. It was not known at the time if the group trespassed the property. Posted No Trespassing Signs within The Ranch at Prescott have been removed/destroyed The Ranch Developer contacts the owner of the property by letter about the November 9 situation, and the property owner has not granted permission to transit the property. The property owner gives permission to post a No Trespassing Sign on property. The No Trespassing Signs are removed and ripped apart a few times. The City of Prescott later places two signs stating "No trail access" at two private Ranch properties being crossed, but the signs are often ignored. Alleged Criminal Trespassing became an issue when the Ranch properties were posted, and trail	The described issues appear to be attributed to access to the Prescott Circle Trail located on AZ State Land easement to the City of Prescott, not the USFS land to the West and South of the Ranch. This plan does not authorize any additional trails in the area of the Ranch community. With regard to the loss of wildlife habitat and disturbance please refer to the wildlife specialist report.

			users and other persons crossed private land and Arizona Trust Land or when trespassers were verbally asked to leave by the property owner. Parking on the 28' streets within The Ranch at Prescott community impairs passage of residential vehicles and in some cases may block Emergency Vehicles from accessing some residential areas. More than 20 parking happenings (a few shown below) occurred on the Echo Hills' cul de sac in The Ranch during the past seven/eight months. Some Fencing on Private Property had purportedly been removed from near YCP #115-01-065. It is my understanding that the City of Prescott replaced said fencing. Adjacent Trails have caused Loss of Animal Habitat and Avian Disruption to wildlife areas bordering The Ranch at Prescott.	
2	1	Patrick Kell/Brent Roberts for PMBA and IMBA	Please accept this letter from the International Mountain Bicycling Association (IMBA) and the Prescott Mountain Bike Alliance (PMBA) regarding your request for comments on the Greater Prescott Trails Mid-Term Project Environmental Assessment. Our organizations greatly appreciate and support the work of the Prescott National Forest in bringing this project on-line, most specifically the intent to: add 59 miles of new, non-motorized trails; add 13.5 miles of new multi-use motorized trails; and construct, improve or expand 8 trailheads. We value the creation of new and improved recreational opportunities for all user groups while giving consideration to the protection and enhancement of the resources the Forest Service is charged with managing. We submitted a detailed comment letter earlier this year (*submitted to District Ranger Sarah*	Thank you for your support and input into the trails planning.

			Tomsky on April 7th, 2016 in reference to the Greater Prescott Trails Planning Initiative) and that letter remains our position on the current planning process. In that letter we supported: 1. Trailhead improvements (parking and educational kiosks) and new trails in the Williamson Valley area, providing improved recreational access for a range of trail user groups. 2. Trailhead development on the upper reaches of Copper Basin Road, and associated sustainable trail development at higher elevations offering more advanced and challenging trails that many mountain bikers seek. These would add to the trail diversity in the Prescott National Forest. 3. Trail and trailhead development in the Emmanuel Pines area, offering riding opportunities to beginner riders and families. 4. Trail development in the Badger Mountain/Trail 62/Ranch Trail area. Trail connectivity here is essential in order to: access the Prescott Circle Trail via sustainable trails of a more uniform trail style; and to connect to Walker Road via sustainable, yet challenging routes. We recommend that the Boy Scout and Turley Trails are left open, with bypasses built to create a more accessible experience; and that Trail 62 to Walker Road is rebuilt, maintaining a challenging character, yet following sustainable alignments. Ms. Johnson, thank you for accepting input from IMBA and PMBA. We will be pleased to see these trails, trailheads, and other recreational enhancements incorporated into the Prescott National Forest - Bradshaw Ranger District trail system in the coming months and years.	

3	1	Randy Powell	As a 43 years resident of Prescott I would like to submit some suggestions for your upcoming discussions of motorized and non-motorized trails in the Prescott National Forest. I have been riding motorcycles in the PNF since 1972 when I came to visit my wife's parents, the year before we moved here to work at Yavapai College. My father-in-law and I had great rides even when we visited in the month of December. To our dismay many of these trails have been closed to motorized traffic over the years. Year after year new closures frustrate us as tax payers and citizens of Yavapai County. The enclosed map shows some of the trails that have been closed since 1972. Some, I would agree with, like the two Groom Creek loop paths up Spruce mountain, but most were closed unnecessarily because the hikers, and eventually the bicycle riders convinced Forest officials it was "safer" to not mix motorized and non-motorized traffic. I now hike 4-8 miles a week with my wife and we are more startled by fast moving bicycles than any hiker I ever came upon while riding a motorcycle. The bicycles are so quiet that they slip up on you without warning. On Aspen Creek trail a month ago we had to get out of the way of 10 bikes flying down the trail. They didn't even slow down for us, as we stepped aside for our safety. They did say "thank you" as they flew by. As a side note, you should know that the number of motorcycle riders has diminished considerably in the past 10 years as quads and side-by-sides have increased in sales. I personally feel that the Forest Service is eager to close everything they can to motorized travel and they love having the hikers and bicycle riders complain. I know you don't	It is unfortunate that some trail you have enjoyed in the past are now closed to motorized use. Sometimes trails must be closed because they are a poor design or location and are posing a hazard to users. Others are closed because of damage to resources such as soils and watersheds or threatened, endangered, or sensitive wildlife species. There have also been many unauthorized trails that the Forest Service has attempted to close and restore. If there are too many trail miles per square mile of land, it causes increased soil movement and erosion and displaces wildlife. We attempt to balance the public's desire for both motorized and non-motorized trails, along with our responsibilities for managing the natural resources so they are not excessively damaged.

			like that comment, but I have seen forest service administrators do this all over the southwest. Prescott is not unique to this troubling issue. I Colorado where we have gone on vacation for 43 years each fall, riding motorcycles over the high mountain passes, we have seen trails that we once rode closed, first to "motorized vehicles", then later closed to "mechanized vehicles" (bicycles) then eventually turned into "wilderness" areas where hikers had to purchase a hiking pass. Wow! What a way to lock out the public access. Try that in Prescott. If you started to close some of our trails to bicycles, they will not be your friends anymore and help you lock out motorcycles. It is happening in National Forests in many states now and spreading. What a waste.	
3	2	Randy Powell	I would like to suggest the following recommendations be added to your new "study" and give us back some of our trails that are close into town. A. Open School house Gulch road to side-by-side traffic and post 15 mph speed limit signs at both ends of the old road. This allows motorcycles, quads, and side-by-sides to ride from White Spar road over to Senator Highway and ride up to the top of Spruce Mountain and return to Prescott. We love to ride big circles. Side-by-sides are riding in there already and they go slower than the motorcycle and even slower than some bicycles.	This suggestion will be considered in the next phase of the Greater Prescott Trails Planning that will deal primarily with motorized trails. Side-by-sides are currently allowed on approximately 1,200 miles of open forest roads.
3	3	Randy Powell	B. Open the southern Groom Creek Trail up to Spruce Mountain to motorcycles for two weeks in the fall and two weeks in the spring.	The Groom Creek Trail has been designed and managed for non-motorized use. A change in allowed uses even for a short

			Post signs requiring riders to keep speeds to 10-15 miles per hour and yield to all hikers. Most hikers like the shorter northern trail. Bicycles go this fast down these two trails and they sneak up on hikers without their awareness faster than motorcycles because they are so quiet.	duration would require a public process.
3	4	Randy Powell	C. Make old 51/51a (now 366), that went up to the Sierra Prieta overlook from the area between the Thumb Butte Road and Copper Basin road, connect with one internal road and let it loop back to the Thumb Butte side where the steel road barrier blocks the old road on the west edge of this area. I used to ride in here all the time. Keep the other roads (there are several) to hikers only but let us ride through here like we used to. I have cut many a cord of firewood in the area years ago and scouted for the wood with my motorcycle.	These roads and the area were closed to motorized use in the late 1990s to prevent impacts and fire threats caused by camping and off road vehicle use. Changing these routes back would be the opposite of what the public process resulted in for this area.
3	5	Randy Powell	Finally, stop closing our access roads and trails. Your new proposal makes four times as many hiking trails as motorized trails already. You may not realize it, but motorized traffic actually helps keep the trails clean if regulated properly. I talked by phone recently with your trail supervisor, Jason. I had met him up on Spruce Mountain a few years ago when we were riding the old Watershed trail from Senator Highway to the Lynx Lake road. He is always most kind over the phone, but basically says hikers request these changes, implying that	This particular trail planning effort is focused primarily on non-motorized trails. In the next two years we will continue with the planning and implementation of changes and additions to the motorized trails system. We work with all types of interests and users in an attempt to provide opportunities for all.

			motorcycles have second or third priority. He never directly says that, but it's obvious when you look at the history of the last 43 years here in Prescott.	
3	6	Randy Powell	I fear you are already saying to yourself that the issues listed above do not fit within the scope of the current "project". If you are doing as I suggest I have the following question. How in the world do we motorcycle riders make our voice heard to the here-to-fore deaf ears of the Prescott National Forest. I thought our entire society was working hard to make things similar for minorities as they are for the majority.	The Greater Prescott Area Trails planning effort has been going on for about four years. This particular project was identified through that collaborative effort as mid-term project work. The short term project work has been completed. These projects are aimed to improve the non-motorized trails in some selected areas of the Prescott Basin. Some of the issues you mention are indeed outside the scope of this effort. We still acknowledge and consider your concerns. We hope you will participate when we begin working on our motorized system.
3	7	Randy Powell	Now the topic of trail maintenance or "adopt a trail". I have been doing this unofficially for over 40 years. In the early 1970s' I road my motorcycle down the entire length of the original trail 48 up Copper Basic Road. Back then it left the road where a current pipe gate blocks the old road. The road went a short way and then onto, what you now call a "single track". This trail went south until it became impassable where the current 260 is joined from the section of the old four wheel drive road that left the Mt. Francis road. When I got to the congested section you could not even find the trail because the brush on the right crossed over to the brush on the left. I came in with friends with brush cutting tools and cleared the bad sections so we could pass without scraping our arms badly. Now this section of 260 is widened for quads	Volunteer trail maintenance should be done by volunteers under an authorized volunteer agreement and the direction of FS personnel. Please contact our trails manager, Jason Williams (928) 777-2220, for information on volunteering.

			and a friend and I went in last year and cut some of the overgrowth back again because it was scratching our quads. Also in the 1970's I was riding the area between Copper Basin road and Thumb Butte road, which is now closed to all motorized traffic. I found a trail marked on the Forest Service maps as 51 and 51a. I rode it on a motorcycle and found much of it impassable because of brush overgrowth. Again, I came in and cut brush back so we could ride it safely. As the years passed, mountain bikes became more and more popular. As I continued to ride the trail it got more and more passable because of use by motorcycles and bicycles. Now you are getting ready to close a trail that I made passable 40 years ago. This frustrates me no end.	
			Even with this said, I would like to volunteer to clear trails. Even talked with Jason a few years ago and said I would be willing to help in any way I could to build or clear trails. I never heard from him. Have you now changed your policy and now ask for volunteer help?	We appreciate our volunteers and all the great work they have done. Please contact Jason Williams for information on volunteering (928) 777-2220.
4	1	Jenny Cobb for Great Old Broads for Wilderness	These comments are submitted on behalf of the Great Old Broads for Wilderness, a national, non-profit organization. Established in 1989, we are advocates, stewards and educators for wild lands. Ours is a lifetime outlook on the benefits of protecting our wild, public lands. Broads, through Broadbands across the country, work with agencies in stewardship and monitoring of public lands. We concur with the Prescott National Forest (PNF) in their efforts to make trail additions, reroutes and trailheads to the official trail system. We applaud your efforts today and in the future to maintain and move	Thank you for your interest and participation in our trail planning efforts.

			forward with trails all in the light of sound environmental and conservation practices - maintaining and restoring the natural ecosystem, for a sustainable future for our wild lands. In the scoping process, thank you for addressing the concerns submitted by members of the public and other entities. These include protecting cultural resources, safety on trails and at trailheads, wildlife, riparian areas, watershed, visual appeal, and preventing erosion. Broads would emphasize that careful planning will be taken to prevent damage to the ecosystem through conscientious construction, maintenance, and timely mitigation as identified and implemented.	
4	2	Jenny Cobb for Great Old Broads for Wilderness	An anecdote: As a child in the 1950's driving through, camping and exploring in the national forests of Northern California, I have never forgotten and have lived by, the signs that said "$100 fine for littering." Today, part of my stewardship is removing trash from our wild lands. Is it possible to include signs asking forest users to keep campsites and trails clean like many wilderness trails do in our National Parks. That is, "pack it in, pack it out." Broads would be happy to see such directives and perhaps even more Forest personnel and/or volunteer presence.	In regards to the additional signage you recommend, we must prioritize what signage we will install with what our budget allows and with consideration of the benefits and appearance.
4	3	Jenny Cobb for Great Old Broads for Wilderness	Again, Broads is concerned that construction and maintenance will be completed "primarily by volunteers . . . ." In this respect, Broads would be pleased to partner with you in trail building, maintenance and monitoring. We are boots on the ground, women and men, ready, willing, experienced, and able to assist the Prescott National Forest in these projects.	We appreciate our volunteers and all the great work they have done. Please contact Jason Williams for information on volunteering (928) 777-2220.

			Thank you for your consideration of our concerns and our offer to lend our help now and in the future. We are pleased that PNF trails will continue to be available to multiusers and still offer scenic beauty and challenges to all recreational users. Please do not privatize any of the PNF where fees and limited access would keep these resources from a good part of our population.	
5	1	Thomas Slaback for Sierra Club	In response to your request for comments on the GPTP Preliminary EA the Yavapai Group of the Grand Canyon Chapter of the Sierra Club provides you with the following concerns and corrections. Abbreviations should be defined with their first use in the document. Beginning on pg. 6 and found throughout the document PCT is not defined (assumed to be Prescott Circle Trail) while other terms are both spelled out and followed with their abbreviations in parenthesis over and over again.	Noted. This has been corrected in the final version.
5	2	Thomas Slaback for Sierra Club	There are several errors in the text referring to Table numbers: pg. 27, under Proposed Action it states that "The proposed management actions (Table 11) have a potential to increase erosion and sediment." However, Table 11 is "Soils and Hydrology Current Conditions and Proposed Actions" and does not make a comparison of tons of sediment erosion differences between current and proposed action. At the end of this paragraph it is stated..."the model predicts an overall decrease in sediment throughout analysis area (Table 12)." Table 12 is "Current Watershed Conditions" and does not make a comparison of tons of sediment erosion differences. Table 13, on pg. 31, "Sediment Reduction From BMPs and Road Conversion" does make this comparison and should be the referenced table. Also on pg.31 under Sediment Model	Table references has been corrected for the final version.

			Results (Summary) it is stated ..."the total annual sediment reduction is 112 tons (Table 12)." This information is actually found in Table 13 on pg. 31. On pg. 32, end of second paragraph it is stated "All of these actions would have or will supply additional sediment within the GPTP area for three to five years following treatment (Table 13)." The values for additional sediment are not shown in Table 13, but they are in Table 14 "Cumulative Effects-Soils and Hydrology, Tons of Sediment."	
5	3	Thomas Slaback for Sierra Club	Page 42 lists a reference that seems not to be applicable to the document: " Schultz, Robert P., 1997, Loblolly Pine: the ecology and culture of loblolly pine." Having had some experience in the southeast for six years in loblolly pine forests (clear cutting) and effects on trails on the Croatan NF, I do not see a connection with this species to the PNF.	This reference was in regard to nutrient losses from a site and into a waterbody with sediment movement from disturbance of vegetation. It would be the same for any forested vegetation type.
5	4	Thomas Slaback for Sierra Club	The document lacks a list of authors.	Noted. Although a list of authors or agency contributors is not required, this is included in the final.
5	5	Thomas Slaback for Sierra Club	With regards to the Emmanuel Pines spaghetti bowl trails, it is stated on pg. 12 that the desired conditions for the Prescott Basin Management Area includes that ...""unofficial" (unauthorized) trails are not evident." And on pg. 17 "The extent of unauthorized trails in the Emmanuel Pines area does detract from the area's scenic quality. Reducing and obliterating unauthorized trails in this area would improve the scenic quality." And on pg. 21 ..."and the majority of the analysis areas within the project area do not currently meet proper watershed conditions." It appears that the way to prevent "unofficial" trails is to authorize them as a part of the official PNF trail system. As you	This is one of the most difficult issues regarding this proposal; balancing the public's desire for more and diverse trails, and the impacts on other resources from the number of trails. If there are not enough, good quality, sustainable trails in the system, it's practically impossible to stop the creation of unauthorized trails. We believe we have found a reasonable and sustainable balance.

			look down on these trails from the higher trails, it does detract from the area's scenic quality. Even if these "unofficial" trails are re-built to BMPs, having this high of a density in such a congested area will lead to watershed impacts of increased erosion and sediment runoff (compared to not having such trails), even if it is less than what the current user created, non-engineered trails are causing.	
5	6	Thomas Slaback for Sierra Club	According to the document on ppg. 36-37, the known Heritage Resource Sites (especially those of the Emmanuel Pines area) within or near to the proposed trails and trailheads have not been inventoried. Before any work is allowed to begin in these areas, such surveys and inventories must be completed and any associated mitigation be undertaken.	Before any work occurs outside existing system trail prisms or disturbed areas of trailheads, a heritage resource survey will be done if it hasn't already been done for that location.
5	7	Thomas Slaback for Sierra Club	The document purports to analyze grazing in regards to the GPTP on pgs. 37-38 and pg. 45. However, only half of the issue is analyzed, that dealing with how the trails will impact grazing. The other half must also be analyzed: how grazing will impact the GPTP. (As an aside to the PNF overall grazing issue, on pg. 37 it is stated that a large portion of the Prescott Basin area has been closed to grazing for reasons such as "Lack of capable grazing lands in densely forested vegetation types." It is ironic that this type of reasoning has not been applied to many grazing allotments on the PNF that are so dense in scrub oak and or manzanita or chaparral that they cannot be walked through.)	When the agency embarks on an analysis of allotment management plans, the effects of livestock grazing on other resources, including recreation, are analyzed. With this analysis, we assess the impacts of this action on other resources, including range resources. We do not analyze the effects of our management of every other resource on the one being analyzed; we analyze the effects of the proposed activities on other resources.
5	8	Thomas Slaback for Sierra Club	Under Wildlife, ppg. 33-36 and especially in appendix A, Project Mitigation and BMPs, it is stated that areas of trail alignment located within Mexican Spotted Owl Critical Habitat "will be coordinated with and require final approval from the forest's wildlife specialist." As with all Threatened/Endangered animals	Consultation with the Fish and Wildlife Service is required only if the biologist determines that there might be an effect to the species or the primary constituent elements of critical habitat. Lowland leopard frog is not a

			(including leopard frog) and their designated Critical Habitats, consultation with the US Fish and Wildlife Service is required.	Threatened or Endangered species and no consultation would be required; however, trail design and BMPs are expected to protect frog habitat.
5	9	Thomas Slaback for Sierra Club	We assume that due to the nebulous nature of the proposed projects in this Preliminary EA, the Final EA will include the specifics of each individual trail or trailhead component project of the GPTP.	The draft and final EA include a fairly thorough description of the proposed projects on pages 3-10, and maps are available online at http://www.fs.usda.gov/project/?project=48048. The precise locations of all trails have not yet been flagged. All actions will conform Forest Service direction for protection of resources. Including more detailed information in this document would make it unnecessarily lengthy. If you would like specific information about a particular trail or trailhead, feel free to contact us.
5	10	Thomas Slaback for Sierra Club	We have submitted these comments in the interest of creating a better document and a great, sustainable Greater Prescott Trails Project.	Thank you for your interest and input.